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FARMERS AND FARM PRODUCTION IN THE UNITED STATES

(A COOPERATIVE REPORT)

Dairy Producers and Dairy Production

SPECIAL REPORTS

1954 Census of Agriculture

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U. S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

WASHINGTON • 1956

U. S. Bureau of the Census

U. S. Department of Agriculture
Ezra Taft Benson, *Secretary*

Agricultural Research Service
Byron T. Shaw, *Administrotor*

U. S. Department of Commerce
Sinclair Weeks, *Secretary*

Bureau of the Census
Robert W. Burgess, *Director*

United States Census of Agriculture: 1954

Volume III
SPECIAL REPORTS
Part 9
Farmers and Farm Production in the United States
(A Cooperative Report)

Chapter V

Dairy Producers and
Dairy Production

CHARACTERISTICS OF FARMERS and FARM PRODUCTION •

PRINCIPAL TYPES OF FARMS •

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PREFACE

The purpose of this report is to present an analysis of the characteristics of farmers and farm production for the most important types of farms as shown by data for the 1954 Census of Agriculture. The analysis deals with the relative importance, pattern of resource use, some measures of efficiency, and problems of adjustment and change for the principal types of farms.

The data given in the various chapters of this report have been derived largely from the special tabulation of data for each type of farm, by economic class, for the 1954 Census of Agriculture. The detailed statistics for each type of farm for the United States and the principal subregions appear in Part 8 of Volume III of the reports for the 1954 Census of Agriculture.

This cooperative report was prepared under the direction of Ray Hurley, Chief of the Agriculture Division of the Bureau of the Census, U. S. Department of Commerce, and Kenneth L. Bachman, Head, Production, Income, and Costs Section, Production Economics Research Branch, Agricultural Research Service of the U. S. Department of Agriculture.

Jackson V. McElveen, Agricultural Economist, Production, Income, and Costs Section, Production Economics Research Branch, Agricultural Research Service of the U. S. Department of Agriculture, supervised a large part of the detailed planning and analysis for the various chapters.

The list of chapters and the persons preparing each chapter are as follows:

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Chapter III____ Tobacco and Peanut Producers and Production
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Chapter IV____ Poultry Producers and Poultry Production
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Chapter V_____ Dairy Producers and Dairy Production
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Chapter VI____ Western Stock Ranches and Livestock Farms
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Chapter VII__ Cash-grain and Livestock Producers in the Corn Belt
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Chapter VIII__ Part-time Farming
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Chapter IX____ Agricultural Producers and Production in the United States—A General View
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The editorial work for this report was performed by Caroline B. Sherman, and the preparation of the statistical tables was supervised by Margaret Wood.

December 1956

UNITED STATES CENSUS OF AGRICULTURE: 1954

REPORTS

Volume I.—Counties and State Economic Areas. Statistics for counties include number of farms, acreage, value, and farm operators; farms by color and tenure of operator; facilities and equipment; use of commercial fertilizer; farm labor; farm expenditures; livestock and livestock products; specified crops harvested; farms classified by type of farm and by economic class; and value of products sold by source.

Data for State economic areas include farms and farm characteristics by tenure of operator, by type of farm, and by economic class.

Volume I is published in 33 parts.

Volume II.—General Report. Statistics by Subjects, United States Census of Agriculture, 1954. Summary data and analyses of the data for States, for Geographic Divisions, and for the United States by subjects.

Volume III.—Special Reports

Part 1.—Multiple-Unit Operations. This report will be similar to Part 2 of Volume V of the reports for the 1950 Census of Agricultnre. It will present statistics for approximately 900 counties and State economic areas in 12 Southern States and Missouri for the number and characteristics of multiple-unit operations and farms in multiple units.

Part 2.—Ranking Agricultural Counties. This special report will present statistics for selected items of inventory and agricultural production for the leading counties in the United States.

Part 3.—Alaska, Hawaii, Puerto Rico, District of Columbia, and U. S. Possessions. These areas were not included in the 1954 Census of Agriculture. The available current data from various Government sources will be compiled and published in this report.

Part 4.—Agriculture, 1954, a Graphic Summary. This report will present graphically some of the significant facts regarding agriculture and agricultural production as revealed by the 1954 Census of Agriculture.

Part 5.—Farm-Mortgage Debt. This will be a cooperative study by the Agricultural Research Service of the U. S. Department of Agriculture and the Bureau of the Census. It will present, by States, data based on the 1954 Census of Agriculture and a special mail survey conducted in January 1956, on the number of mortgaged farms, the amount of mortgage debt, and the amount of debt held by principal lending agencies.

Part 6.—Irrigation in Humid Areas. This cooperative report by the Agricultural Research Service of the U. S. Department of Agriculture and the Bureau of the Census will present data obtained by a mail survey of operators of irrigated farms in 28 States on the source of water, method of applying water, number of pumps used, acres of crops irrigated in 1954 and 1955, the number of times each crop was irrigated, and the cost of irrigation equipment and the irrigation system.

Part 7.—Popular Report of the 1954 Census of Agriculture. This report is planned to be a general, easy-to-read publication for the general public on the status and broad characteristics of United States agriculture. It will seek to delineate such aspects of agriculture as the geographic distribution and differences by size of farm for such items as farm acreage, principal crops, and important kinds of livestock, farm facilities, farm equipment, use of fertilizer, soil conservation practices, farm tenure, and farm income.

Part 8.—Size of Operation by Type of Farm. This will be a cooperative special report to be prepared in cooperation with the Agricultnral Research Service of the U. S. Department of Agriculture. This report will contain data for 119 economic subregions (essentially general type-of-farming areas) showing the general characteristics for each type of farm by economic class. It will provide data for a current analysis of the differences that exist among groups of farms of the same type. It will furnish statistical basis for a realistic examination of production of such commodities as wheat, cotton, and dairy products in connection with actual or proposed governmental policies and programs.

Part 9.—Farmers and Farm Production in the United States. The purpose of this report is to present an analysis of the characteristics of farmers and farm production for the most important types of farms as shown by data for the 1954 Census of Agriculture. The analysis deals with the relative importance, pattern of resource use, some measures of efficiency, and problems of adjustment and change for the principal types of farms. The report was prepared in cooperation with the Agricultural Research Service of the U. S. Department of Agriculture.

The list of chapters (published separately only) and title for each chapter are as follows:

Chapter I—*Wheat Producers and Wheat Production*
II—*Cotton Producers and Cotton Production*
III—*Tobacco and Peanut Producers and Production*
IV—*Poultry Producers and Poultry Production*
V—*Dairy Producers and Dairy Production*
VI—*Western Stock Ranches and Livestock Farms*
VII—*Cash-Grain and Livestock Producers in the Corn Belt*
VIII—*Part-Time Farming*
IX—*Agricultural Producers and Production in the United States—A General View*

Part 10.—Use of Fertilizer and Lime. The purpose of this report is to present in one publication most of the detailed data compiled for the 1954 Census of Agriculture regarding the use of fertilizer and lime. The report presents data for counties, State economic areas, and generalized type-of-farming areas regarding the quantity used, acreage on which used, and expenditures for fertilizer and lime. The Agricultural Research Service cooperated with the Bureau of the Census in the preparation of this report.

Part 11.—Farmers' Expenditures. This report presents detailed data on expenditures for a large number of items used for farm production in 1955, and on the living expenditures of farm operators' families. The data were collected and compiled cooperatively by the Agricultural Marketing Service of the U. S. Department of Agriculture and the Bureau of the Census.

Part 12.—Methods and Procedures. This report contains an outline and a description of the methods and procedures used in taking and compiling the 1954 Census of Agriculture.

INTRODUCTION

ECONOMIC SUBREGIONS AND STATE ECONOMIC AREAS

DEPARTMENT OF COMMERCE

BUREAU OF THE CENSUS

INTRODUCTION

Purpose and scope.—American agriculture is exceedingly diverse and is undergoing revolutionary changes. Farmers and their families obtain their income by producing a large variety of products under a large variety of conditions as well as from sources other than farming. The organization of production, type of farming, productivity, income, expenditures, size, and characteristics of operators of the 4.8 million farms in the United States vary greatly. Agriculture has been a dynamic, moving, adjusting part of our economy. Basic changes in farming have been occurring and will continue to be necessary. Adjustments brought by technological change, by changing consumer wants, by growth of population, and by changes in the income of nonfarm people, have been significant forces in changing agriculture since World War II. The transition from war to an approximate peacetime situation has also made it necessary to reduce the output of some farm products. Some of the adjustments in agriculture have not presented relatively difficult problems as they could be made by the transfer of resources from the production of one product to another. Others require substantial shifts in resources and production.

Moreover, a considerable number of farm families, many of whom are employed full time in agriculture, have relatively low incomes. Most of these families operate farms that are small when compared with farms that produce higher incomes. The acreage of land and the amount of capital controlled by the operators of these small farms are too small to provide a very high level of income. In recent years, many farm families on these small farms have made adjustments by leaving the farm to earn their incomes elsewhere, by discontinuing their farm operations, and by earning more nonfarm income while remaining on the farm or on the place they farmed formerly.

One objective of this report is to describe and analyze some of the existing differences and recent adjustments in the major types of farming and farm production. For important commodities and groups of farms, the report aims to make available, largely from the detailed data for the 1954 Census of Agriculture but in a more concise form, facts regarding the size of farms, capital, labor, and land resources on farms, amounts and sources of farm income and expenditures, combinations of crop and livestock enterprises, adjustment problems, operator characteristics, and variation in use of resources and in size of farms by areas and for widely differing production conditions. Those types of farms on which production of surplus products is important have been emphasized. The report will provide a factual basis for a better understanding of the widespread differences among farms in regard to size, resources, and income. It will also provide a basis for evaluating the effects of existing and proposed farm programs on the production and incomes of major types and classes of farms.

Income from nonfarm sources is important on a large number of farms. About 1.4 million of the 4.8 million farm-operator families, or about 3 in 10, obtain more income from off-farm sources than from the sale of agricultural products. More than three-fourths of a million farm operators live on small-scale part-time farms and ordinarily are not dependent on farming as the main source of family income. These part-time farmers have a quite different relation to adjustments, changes, and farm problems than do commercial farmers. A description of and facts regarding these part-time farms and the importance of nonfarm income for commercial farms are presented in Chapter 8.

Except for Chapter 8, this report deals with commercial farms (see economic class of farm). The analysis is limited to the major types of agricultural production and deals primarily with geographic areas in which each of the major types of agricultural production has substantial significance.

Source of data.—Most of the data presented in this report are from special compilations made for the 1954 Census of Agriculture, although pertinent data from research findings and surveys of the U. S. Department of Agriculture, State Agricultural Colleges, and other agencies have been used to supplement Census data. The detailed Census data used for this report are contained in Part 8 of Volume III of the reports of the 1954 Census of Agriculture. Reference should be made to that report for detailed explanations and definitions and statements regarding the characteristics and reliability of the data.

Areas for which data are presented.—Data are presented in this report primarily for selected economic subregions and for the United States. The boundaries of the 119 subregions used for the compilation of data on which this report is based are indicated by the map on page VI. These subregions represent primarily general type-of-farming areas. Many of them extend into two or more States. (For a more detailed description of economic subregions, see the publication "Economic Subregions of the United States, Series Census BAE; No. 19, published cooperatively by the Bureau of the Census, and the Bureau of Agricultural Economics, U. S. Department of Agriculture, July 1953.)

DEFINITIONS AND EXPLANATIONS

Definitions and explanations are given only for some of the more important items. For more detailed definitions and explanations, reference can be made to Part 8 of Volume III and to Volume II of the reports of the 1954 Census of Agriculture.

A farm.—For the 1954 Census of Agriculture, places of 3 or more acres were counted as farms if the annual value of agricultural products, exclusive of home-garden products, amounted to $150 or more. The agricultural products could have been either for home use or for sale. Places of less than 3 acres were counted as farms only if the annual value of sales of agricultural products amounted to $150 or more. Places for which the value of agricultural products for 1954 was less than these minima because of crop failure or other unusual conditions, and places operated at the time of the Census for the first time were counted as farms if normally they could be expected to produce these minimum quantities of agricultural products.

All the land under the control of one person or partnership was included as one farm. Control may have been through ownership, or through lease, rental, or cropping arrangement.

Farm operator.—A "farm operator" is a person who operates a farm, either performing the labor himself or directly supervising it. He may be an owner, a hired manager, or a tenant, renter, or sharecropper. If he rents land to others or has land cropped for him by others, he is listed as the operator of only that land which he retains. In the case of a partnership, only one partner was included as the operator. The number of farm operators is considered the same as the number of farms.

Farms reporting or operators reporting.—Figures for farms reporting or operators reporting, based on a tabulation of all farms, represent the number of farms, or farm operators, for which the specified item was reported. For example, if there were 11,922 farms in a subregion and only 11,465 had chickens over 4 months old on hand, the number of farms reporting chickens would be 11,465. The difference between the total number of farms and the number of farms reporting an item represents the number of farms not having that item, provided the inquiry was answered completely for all farms.

Farms by type.—The classification of commercial farms by type was made on the basis of the relationship of the value of sales from a particular source, or sources, to the total value of all farm products sold from the farm. In some cases, the type of farm was determined on the basis of the sale of an individual farm product, such as cotton, or on the basis of the sales of closely related products, such as dairy products. In other cases, the type of farm was determined on the basis of sales of a broader group of products, such as grain crops including corn, sorghums, all small grains, field peas, field beans, cowpeas, and soybeans. In order to be classified as a particular type, sales or anticipated sales of a product or group of products had to represent 50 percent or more of the total value of products sold.

The types of commercial farms for which data are shown, together with the product or group of products on which the classification is based are:

Type of farm	*Product or group of products amounting to 50 percent or more of the value of all farm products sold*
Cash-grain	Corn, sorghum, small grains, field peas, field beans, cowpeas, and soybeans.
Cotton	Cotton (lint and seed).
Other field-crop	Peanuts, Irish potatoes, sweetpotatoes, tobacco, sugarcane, sugar beets for sugar, and other miscellaneous crops.
Vegetable	Vegetables.
Fruit-and-nut	Berries and other small fruits, and tree fruits, nuts, and grapes.
Dairy	Milk and other dairy products. The criterion of 50 percent of the total sales was modified in the case of dairy farms. A farm for which the value of sales of dairy products represented less than 50 percent of the total value of farm products sold was classified as a dairy farm if— (*a*) Milk and other dairy products accounted for 30 percent or more of the total value of products sold, and (*b*) Milk cows represented 50 percent or more of all cows, and (*c*) Sales of dairy products, together with the sales of cattle and calves, amounted to 50 percent or more of the total value of farm products sold.
Poultry	Chickens, eggs, turkeys, and other poultry products.
Livestock farms other than dairy and poultry.	Cattle, calves, hogs, sheep, goats, wool, and mohair, provided the farm did not qualify as a dairy farm.
General	Farms were classified as general when the value of products from one source or group of sources did not represent as much as 50 percent of the total value of all farm products sold. Separate figures are given for three kinds of general farms: (*a*) Primarily crop. (*b*) Primarily livestock. (*c*) Crop and livestock. *Primarily crop* farms are those for which the sale of one of the following crops or groups of crops—vegetables, fruits and nuts, cotton, cash grains, or other field crops—did not amount to 50 percent or more of the value of all farm products sold, but for which the value of sales for all these groups of crops represented 70 percent or more of the value of all farm products sold. *Primarily livestock* farms are those which could not qualify as dairy farms, poultry farms, or livestock farms other than dairy and poultry, but on which the sale of livestock and poultry and livestock and poultry products amounted to 70 percent or more of the value of all farm products sold. *General crop and livestock* farms are those which could not be classified as either crop farms or livestock farms, but on which the sale of all crops amounted to at least 30 percent but less than 70 percent of the total value of all farm products sold.
Miscellaneous	This group of farms includes those that had 50 percent or more of the total value of products accounted for by sale of horticultural products, or sale of horses, or sale of forest products.

Farms by economic class.—A classification of farms by economic class was made for the purpose of segregating groups of farms that are somewhat alike in their characteristics and size of operation. This classification was made in order to present an accurate description of the farms in each class and in order to provide basic data for an analysis of the organization of agriculture.

The classification of farms by economic class was made on the basis of three factors; namely, total value of all farm products sold, number of days the farm operator worked off the farm, and the relationship of the income received from nonfarm sources by the operator and members of his family to the value of all farm products sold. Farms operated by institutions, experiment stations, grazing associations, and community projects were classified as abnormal, regardless of any of the three factors.

For the purpose of determining the code for economic class and type of farm, it was necessary to obtain the total value of farm products sold as well as the value of some individual products sold.

The total value of farm products sold was obtained by adding the reported or estimated values for all products sold from the farm. The value of livestock, livestock products except wool and mohair, vegetables, nursery and greenhouse products, and forest

products was obtained by the enumerator from the farm operator for each farm. The enumerator also obtained from the farm operator the quantity sold for corn, sorghums, small grains, hays, and small fruits. The value of sales for these crops was obtained by multiplying the quantity sold by State average prices.

The quantity sold was estimated for all other farm products. The entire quantity produced for wool, mohair, cotton, tobacco, sugar beets for sugar, sugarcane for sugar, broomcorn, hops, and mint for oil was estimated as sold. To obtain the value of each product sold, the quantity sold was multiplied by State average prices.

In making the classification of farms by economic class, farms were grouped into two major groups, namely, commercial farms and other farms. In general, all farms with a value of sales of farm products amounting to $1,200 or more were classified as commercial. Farms with a value of sales of $250 to $1,199 were classified as commercial only if the farm operator worked off the farm less than 100 days or if the income of the farm operator and members of his family received from nonfarm sources was less than the total value of all farm products sold.

Land in farms according to use.—Land in farms was classified according to the use made of it in 1954. The classes of land are mutually exclusive, i. e., each acre of land was included only once even though it may have had more than one use during the year.

The classes referred to in this report are as follows:

Cropland harvested.—This includes land from which crops were harvested; land from which hay (including wild hay) was cut; and land in small fruits, orchards, vineyards, nurseries, and greenhouses. Land from which two or more crops were reported as harvested was to be counted only once.

Cropland used only for pasture.—In the 1954 Census, the enumerator's instructions stated that rotation pasture and all other cropland that was used only for pasture were to be included under this class. No further definition of cropland pastured was given the farm operator or enumerator. Permanent open pasture may, therefore, have been included under this item or under "other pasture," depending on whether the enumerator or farm operator considered it as cropland.

Cropland not harvested and not pastured.—This item includes idle cropland, land in soil-improvement crops only, land on which all crops failed, land seeded to crops for harvest after 1954, and cultivated summer fallow.

In the Western States, this class was subdivided to show separately the acres of cultivated summer fallow. In these States, the acreage not in cultivated summer fallow represents largely crop failure. There are very few counties in the Western States in which there is a large acreage of idle cropland or in which the growing of soil-improvement crops is an important use of the land.

In the States other than the Western States, this general class was subdivided to show separately the acres of idle cropland (not used for crops or for pasture in 1954). In these States, the incidence of crop failure is usually low. It was expected that the acreage figure that excluded idle land would reflect the acreage in soil-improvement crops. However, the 1954 crop year was one of low rainfall in many Eastern and Southern States and, therefore, in these areas the acreage of cropland not harvested and not pastured includes more land on which all crops failed than would usually be the case.

Cultivated summer fallow.—This item includes cropland that was plowed and cultivated but left unseeded for several months to control weeds and conserve moisture. No land from which crops were harvested in 1954 was to be included under this item.

Cropland, total.—This includes cropland harvested, cropland used only for pasture, and cropland not harvested and not pastured.

Land pastured, total.—This includes cropland used only for pasture, woodland pastured, and other pasture (not cropland and not woodland).

Woodland, total.—This includes woodland pastured and woodland not pastured.

Value of land and buildings.—The value to be reported was the approximate amount for which the land and the buildings on it would sell.

Off-farm work and other income.—Many farm operators receive a part of their income from sources other than the sale of farm products from their farms. The 1954 Agriculture Questionnaire included several inquiries relating to work off the farm and nonfarm income. These inquiries called for the number of days worked off the farm by the farm operator; whether other members of the operator's family worked off the farm; and whether the farm operator received income from other sources, such as sale of products from land rented out, cash rent, boarders, old age assistance, pensions, veterans' allowances, unemployment compensation, interest, dividends, profits from nonfarm business, and help from other members of the operator's family. Another inquiry asked whether the income of the operator and his family from off-farm work and other sources was greater than the total value of all agricultural products sold from the farm in 1954. Off-farm work was to include work at nonfarm jobs, businesses, or professions, whether performed on the farm premises or elsewhere; also, work on someone else's farm for pay or wages. Exchange work was not to be included.

Specified facilities and equipment.—Inquiries were made in 1954 to determine the presence or absence of selected items on each place such as (1) telephone, (2) piped running water, (3) electricity, (4) television set, (5) home freezer, (6) electric pig brooder, (7) milking machine, and (8) power feed grinder. Such facilities or equipment were to be counted even though temporarily out of order. Piped running water was defined as water piped from a pressure system or by gravity flow from a natural or artificial source. The enumerator's instructions stated that pig brooders were to include those heated by an electric heating element, by an infrared or heat bulb, or by ordinary electric bulbs. They could be homemade.

The number of selected types of other farm equipment was also obtained for a sample of farms. The selected kinds of farm equipment to be reported were (1) grain combines (for harvesting and threshing grains or seeds in one operation); (2) cornpickers; (3) pickup balers (stationary ones not to be reported); (4) field forage harvesters (for field chopping of silage and forage crops); (5) motortrucks; (6) wheel tractors (other than garden); (7) garden tractors; (8) crawler tractors (tracklaying, caterpillar); (9) automobiles; and (10) artificial ponds, reservoirs, and earth tanks.

Wheel tractors were to include homemade tractors but were not to include implements having built-in power units such as self-propelled combines, powered buck rakes, etc. Pickup and truck-trailer combinations were to be reported as motortrucks. School buses were not to be reported, and jeeps and station wagons were to be included as motortrucks or automobiles, depending on whether used for hauling farm products or supplies, or as passenger vehicles.

Farm labor.—The farm-labor inquiries for 1954, called for the number of persons doing farmwork or chores on the place during a specified calendar week. Since starting dates of the 1954 enumeration varied by areas or States, the calendar week to which the farm-labor inquiries related varied also. The calendar week was September 26–October 2 or October 24–30. States with the September 26–October 2 calendar week were: Arizona, California, Colorado, Connecticut, Florida, Idaho, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico,

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New York, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, Wisconsin, and Wyoming. States with the October 24–30 calendar week were: Alabama, Arkansas, Delaware, Georgia, Illinois, Indiana, Iowa, Maryland, Mississippi, Missouri, North Carolina, Ohio, South Carolina, Virginia, and West Virginia. Farmwork was to include any work, chores, or planning necessary to the operation of the farm or ranch business. Housework, contract construction work, and labor involved when equipment was hired (custom work) were not to be included.

The farm-labor information was obtained in three parts: (1) Operators working, (2) unpaid members of the operator's family working, and (3) hired persons working. Operators were considered as working if they worked 1 or more hours; unpaid members of the operator's family, if they worked 15 or more hours; and hired persons, if they worked any time during the calendar week specified. Instructions contained no specifications regarding age of the persons working.

Regular and seasonal workers.—Hired persons working on the farm during the specified week were classed as "regular" workers if the period of actual or expected employment was 150 days or more during the year, and as "seasonal" workers if the period of actual or expected employment was less than 150 days. If the period of expected employment was not reported, the period of employment was estimated for the individual farm after taking into account such items as the basis of payment, wage rate, expenditures for labor in 1954, and the type and other characteristics of the farm.

Specified farm expenditures.—The 1954 Census obtained data for selected farm expense items in addition to those for fertilizer and lime. The expenditures were to include the total specified expenditures for the place whether made by landlord, tenant, or both.

Expenditures for machine hire were to include any labor included in the cost of such machine hire. Machine hire refers to custom machine work such as tractor hire, threshing, combining, silo filling, baling, ginning, plowing, and spraying. If part of the farm products was given as pay for machine hire, the value of the products traded for this service was to be included in the amount of expenditures reported. The cost of trucking, freight, and express was not to be included.

Expenditures for hired labor were to include only cash payments. Expenditures for housework, custom work, and contract construction work were not to be included.

Expenditures for feed were to include the expenditures for pasture, salt, condiments, concentrates, and mineral supplements, as well as those for grain, hay, and mill feeds. Expenditures for grinding and mixing feeds were also to be included. Payments made by a tenant to his landlord for feed grown on the land rented by the tenant were not to be included.

Expenditures for gasoline and other petroleum fuel and oil were to include only those used for the farm business. Petroleum products used for the farmer's automobile for pleasure or used exclusively in the farm home for heating, cooking, and lighting were not to be included.

Crops harvested.—The information on crops harvested refers to the acreage and quantity harvested for the 1954 crop year. An exception was made for land in fruit orchards and planted nut trees. In this case, the acreage represents that in both bearing and nonbearing trees and vines as of October and November 1954.

Hay.—The data for hay includes all kinds of hay except soybean, cowpea, sorghum, and peanut hay.

Livestock and poultry.—The data on the number of livestock and poultry represent the number on hand on the day of enumeration (October-November 1954). The data relating to livestock products and the number of livestock sold relate to the sales made during the calendar year 1954.

LABOR RESOURCES

The data for labor resources available represent estimates based largely on Census data and developed for the purpose of making comparisons among farms of various size of operations. The labor resources available are stated in terms of man-equivalents.

To obtain the man-equivalents the total number of farm operators as reported by the 1954 Census were adjusted for estimated man-years of work off the farm and for the number of farm operators 65 years old and over. The farm operator was taken to represent a full man-equivalent of labor unless he was 65 years or older or unless he worked at an off-farm job in 1954.

The man-equivalent estimated for farm operators reporting specified amounts of off-farm work were as follows:

Days worked off the farm in 1954	*Estimated man-equivalent*
1–99 days	0.85
100–199 days	.50
200 days and over	.15

The man-equivalent for farm operators 65 years of age and older was estimated at 0.5.

Man-equivalents of members of the farm operator's family were based upon Census data obtained in response to the question "How many members of your family did 15 or more hours of farm work on this place the week of September 26–October 2 (or, in some areas, the week of October 24–30) without receiving cash wages?" Each family worker was considered as 0.5 man-equivalent. This estimate provides allowance for the somewhat higher incidence of women, children, and elderly persons in the unpaid family labor force.

In addition, the number of unpaid family workers who were reported as working 15 or more hours in the week of September 26–October 2 was adjusted to take account of seasonal changes in farm employment. Using published and unpublished findings of the U. S. Department of Agriculture and State Agricultural Colleges, and depending largely upon knowledge and experience with the geographic areas and type of farming, each author determined the adjustment factor needed to correct the number of family workers reported for the week of September 26–October 2 to an annual average basis.

Man-equivalents of hired workers are based entirely upon the expenditure for cash wages and the average wage of permanent hired laborers as reported in the 1954 Census of Agriculture.

Value of or investment in livestock.—Numbers of specified livestock and poultry in each subregion were multiplied by a weighted average value per head. The average values were computed from data compiled for each kind of livestock for the 1954 Census of Agriculture. The total value does not include the value of goats. (For a description of the method of obtaining the value of livestock, see Chapter VI of Volume II of the reports for the 1954 Census of Agriculture.)

Value of investment in machinery and equipment.—The data on value of investment in machinery and equipment were developed for the purpose of making broad comparisons among types and economic classes of farms and by subregions. Numbers of specified machines on farms, as reported by the Census, were multiplied by estimated average value per machine. Then the total values obtained were adjusted upward to provide for the inclusion of items of equipment not included in the Census inventory of farm machinery.

The estimates for average value of specified machines and the proportion of total value of all machinery represented by the value of these machines were based largely on published and unpublished data from the "Farm Costs and Returns" surveys conducted currently by the Agricultural Research Service, U. S. Department of Agriculture.[1] Modifications were made as needed in the individual chapters on the basis of State and local studies. The total estimated value of all machinery for all types and economic classes of farms is approximately equal to the value of all machinery as estimated by the U. S. Department of Agriculture.

Value of farm products sold, or gross sales.—Data on the value of the various farm products sold were obtained for 1954 by two methods. First, the values of livestock and livestock products sold, except wool and mohair; vegetables harvested for sale; nursery and greenhouse products; and forest products were obtained by asking each farm operator the value of sales. Second, the values of all other farm products sold were computed. For the most important crops, the quantity sold or to be sold was obtained for each farm. The entire quantity harvested for cotton and cottonseed, tobacco, sugar beets for sugar, hops, mint for oil, and sugarcane for sugar was considered sold. The quantity of minor crops sold was estimated. The value of sales for each crop was computed by multiplying the quantity sold by State average prices. In the case of wool and mohair, the value of sales was computed by multiplying the quantity shorn or clipped by the State average prices.

Gross sales include the value of all kinds of farm products sold. The total does not include rental and benefit, soil conservation, price adjustment, Sugar Act, and similar payments. The total does include the value of the landlord's share of a crop removed from a farm operated by a share tenant. In most of the tables, detailed data are presented for only the more important sources of gross sales and the total for the individual farm products or sources will not equal the total as the values for the less important sources or farm products have been omitted. (For a detailed statement regarding the reliability and method of obtaining the value of farm products sold, reference should be made to Chapter IX of Volume II of the reports for the 1954 Census of Agriculture.)

Livestock and livestock products sold.—The value of sales for livestock and livestock products includes the value of live animals sold, dairy products sold, poultry and poultry products sold, and the calculated value of wool and mohair. The value of bees, honey, fur animals, goats, and goat milk is not included.

The value of dairy products includes the value of whole milk and cream sold, but does not include the value of butter and cheese, made on the farm, and sold. The value of poultry and products includes the value of chickens, broilers, chicken eggs, turkeys, turkey eggs, ducks, geese, and other miscellaneous poultry and poultry products sold. The value does not include the value of baby chicks sold.

Crops sold.—Vegetables sold includes the value of all vegetables harvested for sale, but does not include the value of Irish potatoes and sweetpotatoes.

The value of all crops sold includes the value of all crops sold except forest products. The value of field crops sold includes the value of sales of all crops sold except vegetables, small fruits and berries, fruits, and nuts.

[1] Farm Costs and Returns, 1955 (with comparisons), Agriculture Information Bulletin No. 158, Agricultural Research Service, U. S. Department of Agriculture, June 1956.

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DAIRY PRODUCERS AND DAIRY PRODUCTION

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DAIRY PRODUCERS AND DAIRY PRODUCTION

P. E. McNall

INTRODUCTION

Change is continuous in the dairy industry. During one lifetime it has changed from a family-cow business to a concentrated and highly specialized industry. This transformation has developed under a wide range of conditions of production on dairy farms. Some dairy farms are large and highly mechanized units. Others still are small. Some dairy farms are highly specialized. Others have diversified operations. Such variations of conditions are important and must be given close consideration when appraising incomes of dairy farmers and prospective changes in dairy production.

Developments in dairying have not been limited to any one region or area. Dairying is found in every part of the United States. Milk is produced from the northernmost States of Maine, Minnesota, and Washington to Texas and Florida; from the Atlantic Ocean to the Pacific.

Despite this broad geographic dispersion of production some regions have developed into well-recognized dairy areas while in others dairying is secondary to other types of production. Reasons back of these areas of concentrations are almost as varied as are the areas themselves. Both physical and economic factors contribute to differences. Climate, soil, topography, markets, and the possibility of production of other commodities all contribute to the types of production found in different parts of the country. Moreover, the nationality of the local farmers frequently brings to an area definite aptitudes, skills, and knowledge, that partly determine the ultimate type of farming.

Areas now characterized as most important in dairy production usually have a rolling to hilly topography with somewhat limited acreages for the growing of cultivated crops and with considerable acreages that are most useful as pastureland. Soils range from fair to good but crop acreages per farm are not large.

CHANGES CHARACTERIZE THE INDUSTRY

The Northeastern Dairy Region is the oldest in the country and has the longest history. During its early history and well into the 19th century the production of dairy products was essentially for home consumption. Little milk was produced during the winter. During the flush spring and early summer seasons milk was skimmed and churned into butter or was made into cheese. These were mostly home procedures and the products were stored away in cellars, caves, or spring houses for winter use. Dairying was strictly secondary to the production of wheat, beef, sheep, and horses, the market for which was well established and accessible. Partly as a consequence of soil exhaustion with ensuing low yields, depredations of the weevil, and rising land values, and partly as a result of industrial development and improved transportation, the production of wheat declined and beef cattle and sheep were largely replaced by milk cows.

Urban communities continued to grow and the demand for milk so increased that delivery by individual dairymen became no longer possible. Distances to market became so great that daily trips could not be made with horse-drawn vehicles. This led to an intermediary organization which bought the milk from the individual farmers, bottled it, and later pasteurized it and distributed it to customers.

Small cheese factories and creameries continued to handle milk that was not needed for fluid consumption or that was not conveniently located for transportation. With the development of faster means of transportation, and especially as a result of the development of better methods of handling milk, the so-called urban milk sheds expanded to meet the demands of the ever-growing cities. By the close of the century those local processing plants were mostly replaced by points of fluid milk concentration in order to meet this expanding demand. It was in this way that the Northeastern Dairy Region developed into a fluid-milk region with only a small scattering of local processing plants.

Production on many of the farms in the Great Lakes Region around the close of the 19th century followed the pattern set by the producers in the northeastern part of the country. Early production consisted of wheat, cattle, and horses, which could be delivered to the market during the slack time of the farmers. The few head of milk cows which were brought in by early farmers found plentiful summer feed on the rough meadowland; their numbers increased. The small surpluses of summer milk were made into butter and cheese and stored in cellars or spring houses for winter use or for sale wherever sales could be made.

In the meantime, the opening of the prairies brought the production of vast quantities of wheat, corn, and beef cattle, which so reduced the prices for these commodities that it was no longer profitable for the Great Lakes farmers to continue in their production. Meanwhile, markets for dairy products were developing. These farmers found it to their advantage to raise feed crops for dairy cows rather than to continue in the more extensive type of production of cash grains and beef. They also found the cooler and somewhat damp summer climate conducive to the production of hay which gave feed for winter feeding. The result has been a continued increase in numbers of dairy cattle in those areas where they have an advantage over other types of production.

The fluid or market-milk industry necessarily developed only and concurrently with the growth of large centers of population. Two factors limited the growth of dairying around these centers—the perishability of the product and the necessary transportation to market. As transportation facilities changed from horse-drawn vehicles over rough dirt roads to fast motor-driven trucks over smooth hard-surfaced roads the producing areas expanded. Facilities for handling the larger supplies and for meeting the requirements of surplus production came into existence. Assembling centers, refrigeration, and rapid transportation expanded the market-milk areas from a few miles to a hundred or more.

Other uses for milk and new processes further expanded surplus-producing areas as plants were placed in the centers of production rather than near centers of population. Creameries, cheese factories, condenseries, and dried milk plants were so located as to take advantage of local production and so reduce the costs of transportation on bulky products.

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EXPANSION IS CONSISTENT

Dairying has experienced no phenomenal spurts or disastrous setbacks during its development. Its growth has probably been the most consistent of the major agricultural enterprises. Milk cow numbers increased gradually from 17,125,000 on hand January 1, 1910, to a maximum of 27,770,000 on the same date in 1945. From that time there has been a gradual decline until on January 1, 1956, there were only 23,318,000 on hand. The change from year to year has never exceeded 5 percent whereas the number of beef cows—or cows other than milk cows—has varied nearly twice as much. Likewise, the production of milk during any one year has not changed more than 5 percent from the year before, whereas beef production frequently has changed as much as 10 or 12 percent; during 1953 total beef production was practically 25 percent greater than in 1952.

The greater variation in the yearly production of beef is partly due to the sale of cull cows from milking herds and partly to the diverse conditions under which beef cattle are raised and fed. The beef industry has developed in regions of more variable crop-growing conditions and in areas of greater economic flexibility than has dairying. Production conditions in these beef areas are excellent for the grain crops used in the fattening and finishing of beef cattle for market or for hog feeding. The individual grain producer may use either of these classes of livestock for disposing of his feed supplies depending upon the relative costs of animals to be fed and prospective prices for livestock when ready for market; or he may sell the grain as a cash crop.

The result of this interplay of economic situations is a less variable yearly production of all red meats than is the case of either beef or pork alone, but a more variable production pattern than for milk. This situation is reflected in the yearly average prices farmers receive for these products (see fig. 1). During the decade ending in 1953, the average yearly prices received by farmers either for cattle or for hogs varied more than did the prices received for milk. A study of prices of dairy products covering several decades shows that milk prices to farmers do not go as high as do prices of other agricultural products when demand is suddenly increased. Neither have they in the past gone as low as other prices when depressed conditions for agriculture prevail. Dairying is one of the most stable of agricultural enterprises.

INDEX NUMBERS OF AVERAGE YEARLY PRICES RECEIVED BY FARMERS FOR MILK, CATTLE, AND HOGS: 1944-1954

(1944-1953=100)

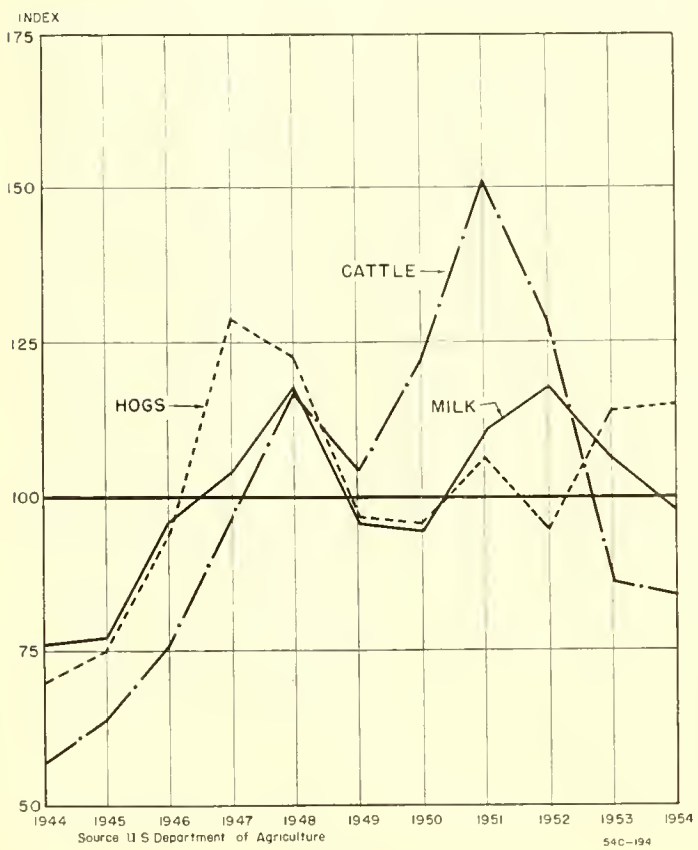

Figure 1.

MARKETING PROBLEMS

Dairy farming meets unusual problems in the marketing of some of its products. No suitable substitute has been found for whole milk as a human food and skim milk products are filling a unique place in meeting certain nutrition needs. Therefore, the market for both continues to expand. The situation is different with butterfat. Other fats and oils compete directly with it in both cooking and baking and as a spread for bread. Competition has been so keen that the place of butter in the diet has been greatly reduced. Although we are using as much edible fats and oils per capita as before, butterfat accounts for a much smaller fraction of this consumption, and a much smaller proportion of milk is used for making butter. During 1925 nearly one-half (44 percent) of all milk was used for this purpose (Table 1). Since then a steady and consistent drop in this use has taken place; during 1955 only 25 percent of all milk was used for butter production—a decrease of nearly 50 percent.

Table 1.—Percentage Distribution of Milk by Use, for the United States: 1925 to 1955

Year	Percent of milk used for—					
	All butter	Fluid consumption	Manufactured products		Other uses	Total
			Cheese	Other		
1925	44.4	41.1	5.3	6.6	2.6	100.0
1930	42.2	40.3	5.0	6.8	5.7	100.0
1935	42.9	40.0	6.1	6.9	4.1	100.0
1940	40.3	39.2	7.1	9.0	4.4	100.0
1945	28.2	43.7	9.2	13.9	5.0	100.0
1950	28.1	45.1	10.1	13.2	3.5	100.0
1955	24.9	47.2	10.9	13.2	3.8	100.0

Source: Milk, Farm Production, Disposition and Income. 1954-55 U. S. D. A.—A. M. S. 30 (1954-55) April 1956.

The proportion of milk used for most other purposes has increased during this period. The greatest proportionate increase has been in the manufactured products of cheese and condensed and evaporated milk. Milk used for fluid consumption increased from 41 percent of all milk produced in 1925 to 47 percent in 1955. Aggregate milk production increased more than one-third during this period.

The quantity of milk used on farms where produced dropped from 27 million pounds in 1925 to 15 million in 1955. Nine million pounds of this decrease is the result of less farm-churned butter; another 3 million pounds represents the reduction in the consumption of fluid milk and cream by farm families. This decrease in farm use is accounted for partly by a reduction of one-fourth in the number of farms during this 30-year period and partly by the farm family's turning to the use of creamery rather than homemade butter. Even so, there is now being used on farms where produced only 310 pounds milk equivalent per farm family in comparison with 425 pounds 30 years ago.

A current surplus of milk exists even though there are not so many milk cows in this country now as in 1924 and population has increased 46 percent. This is especially striking because the per capita production of milk during this time decreased from 821 ponnds to 742 pounds (Table 2).

Table 2.—Milk Production and Population of the United States: 1924 to 1955

Year	Average number of milk cows on farms [1] (thousand)	Population (thousand)	Population per milk cow	Milk production		
				Total (millions of pounds) [1]	Per capita (pounds)	Per cow (pounds)
1924	21,417	114,113	5.3	93,660	821	4,167
1930	22,218	123,077	5.5	102,984	837	4,508
1940	23,671	131,954	5.6	111,512	845	4,622
1945	25,033	132,481	5.3	120,628	910	4,787
1950	21,944	150,697	6.9	117,302	778	5,314
1955	21,232	166,540	7.8	123,554	742	5,815

[1] Source: Dairy Statistics, Statistical Bulletin No. 134, Revised May 1956—U. S. Department of Agriculture.

Current oversupply of dairy products with its ensuing price problem is created not so much by milk producers as by the change in consumer habits. The loss of the butter market to date amounts to an equivalent of 160 pounds of milk per capita.

The Commodity Credit Corporation has bought and disposed of the equivalent of 32 billion pounds of milk since 1949 in its efforts to maintain prices of dairy products.[1]

Further changes in consumer habits are reflected in other dairy products. Conspicuous increases in per capita consumption of fluid milk, condensed and evaporated milk, and total cheese and milk products used in frozen desserts, have taken place since 1924. The only decrease in the per capita consumption of dairy products, on the other hand, was in butter, already mentioned. Total civilian consumption of dairy products during 1955 was 700 pounds milk equivalent per capita in comparison with 785 pounds during 1924.

CHANGES IN DAIRY FARMING

The number of farms producing milk and cream is changing with changing economic conditions. Milk cows were reported on 3,648,000 farms, or 68 percent of all farms, in 1950 (Table 3). This number had decreased to 2,956,000 farms, or 62 percent of all farms, 5 years later. Meanwhile, the number of cows increased from 6 cows per farm in 1950 to 7 in 1954.

Table 3.—Changes in Number of Farms Having Milk Cows and Number of Cows per Farm, for the United States: 1910 to 1954

Year	Number of farms			Milk cows per farm
	Total	With milk cows		
		Number	Percent of total	
1910	6,361,502	5,140,869	81	3.3
1920	6,448,343	4,461,296	69	4.4
1930	6,288,648	4,452,936	71	4.6
1940	6,096,799	4,644,317	76	5.2
1950	5,382,162	3,648,257	68	5.8
1954	4,782,416	2,956,900	62	6.9

Dairy farms have decreased in number. In 1949, there were 602,000; in 1954 there were 549,000—a drop of 9 percent. This is slightly less than the decrease of 10½ percent in the total number of commercial farms during that time (see figs. 2 and 3). Most of this reduction is in the smaller farms. The remaining dairy farms averaged 20 cows per farm in 1954 as compared with 16 as an average in 1949. The greatest reduction has taken place in areas that have enjoyed the best prices for dairy products; conversely, the areas with the lower prices show less reduction. To some extent these area differences are associated with alternative opportunities, both on the farm and off the farm. The Northeastern Dairy Area, where milk prices are somewhat higher than in the Midwest but where off-farm employment opportunities have been generally good, had a reduction of 11½ percent during the 5-year period. On the other hand, the Lake area, where the prices of dairy products are not so satisfactory as in the East, showed less than half this rate of reduction—5½ percent.

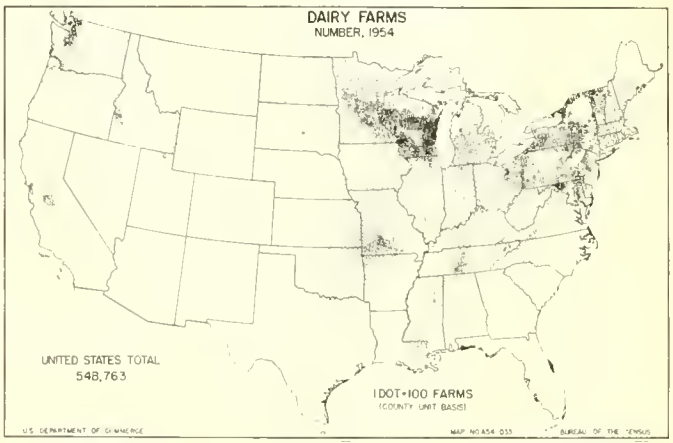

Figure 2.

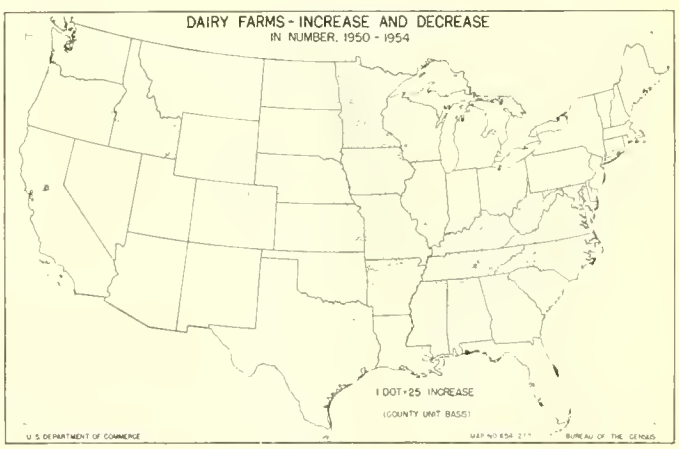

Figure 3.

When the fignres for the Lake Area are given by States the picture is confusing. Wisconsin showed a reduction of 8 percent in the number of dairy farms, whereas Minnesota showed less than two-tenths of 1 percent. Most of the increases in number of dairy farms are outside the important dairy areas, whereas the decreases are notably within. These shifts would suggest that some farmers outside the dairy areas are finding price relationships good enough, compared to alternatives, to justify going into the production of milk and cream, whereas the number of dairy farms is decreasing within the dairy belt. That dairying outside the main dairy areas is mostly secondary to other enterprises on the individual farms may help to explain this situation.

[1] See Appendix article "Dairy Products and Price Supports."

A particularly important change taking place in dairy farming is the reduction in the number of very small farms and small herds, and the increase in the number of the larger units. Dairy farms with fewer than 50 acres of land have decreased during this 5-year period from 11 percent of all dairy farms to 9 percent (Table 4). The percentage of dairy farms with more than 180 acres increased from 28.9 percent of all dairy farms in 1949 to 33.8 percent in 1954.

Table 4.—Number of Dairy Farms by Size of Farm, for the United States: 1950 and 1954

Size of farm	1950		1954	
	Number of farms	Percent distribution	Number of farms	Percent distribution
Total	602,093	100.0	548,767	100.0
1 to 9 acres	6,363	1.1	5,664	1.0
10 to 29 acres	22,068	3.7	16,123	3.0
30 to 49 acres	37,562	6.2	28,087	5.1
50 to 69 acres	39,415	6.5	30,937	5.6
70 to 99 acres	103,489	17.1	84,168	15.3
100 to 139 acres	120,905	20.1	105,291	19.2
140 to 179 acres	98,516	16.4	93,010	17.0
180 to 219 acres	56,404	9.4	57,292	10.4
220 to 259 acres	37,926	6.3	38,422	7.0
260 to 499 acres	63,542	10.6	71,435	13.0
500 to 999 acres	13,294	2.2	15,116	2.8
1,000 acres or more	2,609	.4	3,222	.6

Small herds are decreasing as rapidly as small farms (Table 5). In 1950, 82 percent of the farms with milk cows had fewer than 10 cows per herd. By 4 years later this number had been reduced to 78 percent of all farms. Forty-three percent of all milk cows were on these small farms in 1950, but by 1954 the number was 33 percent. On the other hand, there were 60 percent more farms with 20 or more cows in 1954 than in 1950, and they have 39 percent of all milk cows in comparison with 28 percent 4 years earlier. This kind of change makes for a more effective use of resources and for better living conditions for those operators who continue as dairymen.

Another comparison of the change in size of farms is brought out in the classification of dairy farms by economic class. In 1950, 32.8 percent of all dairy farms had gross incomes of less than $2,500 per farm and 11.9 percent showed gross incomes in excess of $10,000 per farm (Table 6). In 1954, the percentage of small-income farms had decreased to 27.4 percent of all dairy farms, whereas the number of large-income farms was increased to 16 percent. This type of change can also be beneficial to the remaining dairy farmers.

Table 5.—Percentage Distribution of Milk Cows and Milk Production by Size of Herd, for the United States: 1954 and 1950

Size of herd (number of milk cows)	Farms with milk cows		Number of milk cows	
	1954	1950	1954	1950
Total number	2,956,900	3,648,257	20,365,450	21,232,573
	Percent distribution			
Total	100.0	100.0	100.0	100.0
1 to 4	60.9	62.5	16.3	20.7
5 to 9	16.7	19.4	16.9	22.3
10 to 19	14.1	13.1	27.6	29.5
20 to 29	5.1	3.3	17.0	12.9
30 to 49	2.4	1.3	12.4	7.9
50 or more	.8	.5	9.8	6.7

Table 6.—Percentage Distribution of Dairy Farms by Economic Class of Farm, for the United States: 1954 and 1950

Year	Number of farms	Percent distribution by economic class of farm					
		I	II	III	IV	V	VI
1954	548,767	2.1	13.9	28.5	28.0	18.7	8.7
1950	602,093	1.7	10.2	25.6	29.9	22.2	10.6

The average size of the dairy farm when measured by total acres of land in the farm compares favorably with most other farms of the country (fig. 4). Only wheat farms and ranches are conspicuously larger. It is only from the standpoint of amount of harvested cropland that the size appears smaller than many other types of farming (fig. 5).

The average dairy farm in both the Lake and the Northeastern Dairy Areas is between 100 and 199 acres. Most of the counties in the Corn Belt show the same total acreage per farm. When the acreage of these farms is expressed as cropland harvested, it is found that the dairy areas use around 30 percent of their total farm acreage for this purpose while the Corn Belt uses more than twice that, or approximately 70 percent.

Total milk equivalent of milk and cream sold from all farms in 1954 was 95,409 million pounds. The sale of cream accounted for 13 percent of this amount; the remainder was used for fluid-milk consumption and manufacture (Table 7). Slightly less than 2 percent of the total milk-equivalent sales was from noncommercial farms which had 8 percent of all milk cows. Commercial farms accounted for the remaining 98 percent. The nondairy farms within the commercial group had 39 percent of all milk cows and sold 19 percent of the whole milk sold, and 76 percent of the cream.

Table 7.—Number of Milk Cows and Sale of Milk and Cream for Dairy, Commercial, and Other Farms, for the United States: 1954

Item	Dairy farms		United States		All commercial farms		Other farms	
	Total	Percent	Total	Percent	Total	Percent	Total	Percent
Milk cows—Number	10,748,440	52.8	20,365,450	100.0	18,671,093	91.7	1,694,357	8.3
Whole milk sold—pounds	66,170,754,744	79.8	82,915,775,259	100.0	81,676,968,611	98.5	1,238,806,648	1.5
Cream sold—butterfat, pounds	92,591,197	20.0	463,025,820	100.0	444,634,429	96.0	18,391,391	4.0
Milk equivalent—pounds	68,670,612,534	72.0	95,408,549,628	100.0	93,697,698,123	98.2	1,710,851,505	1.8

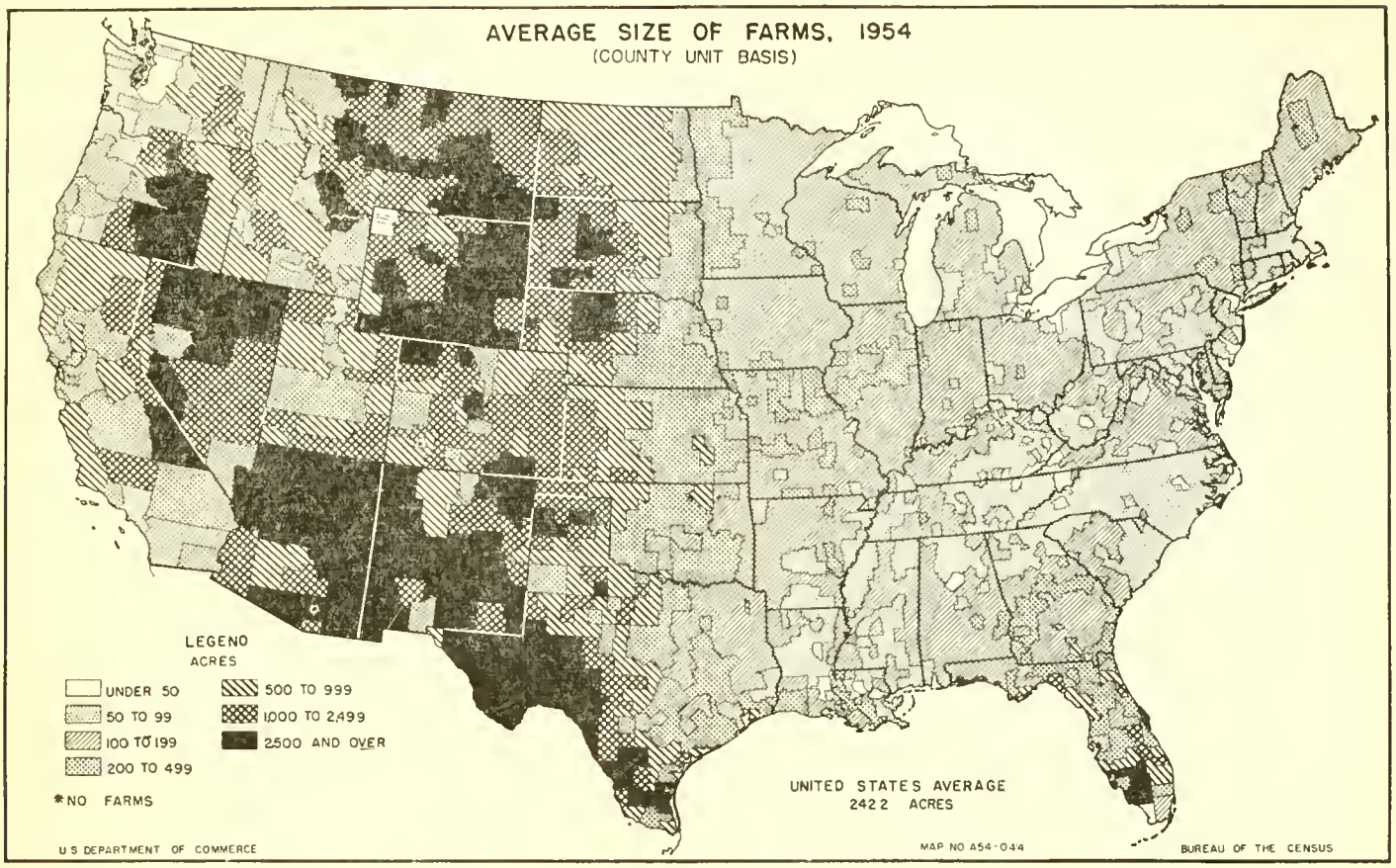

Figure 4.

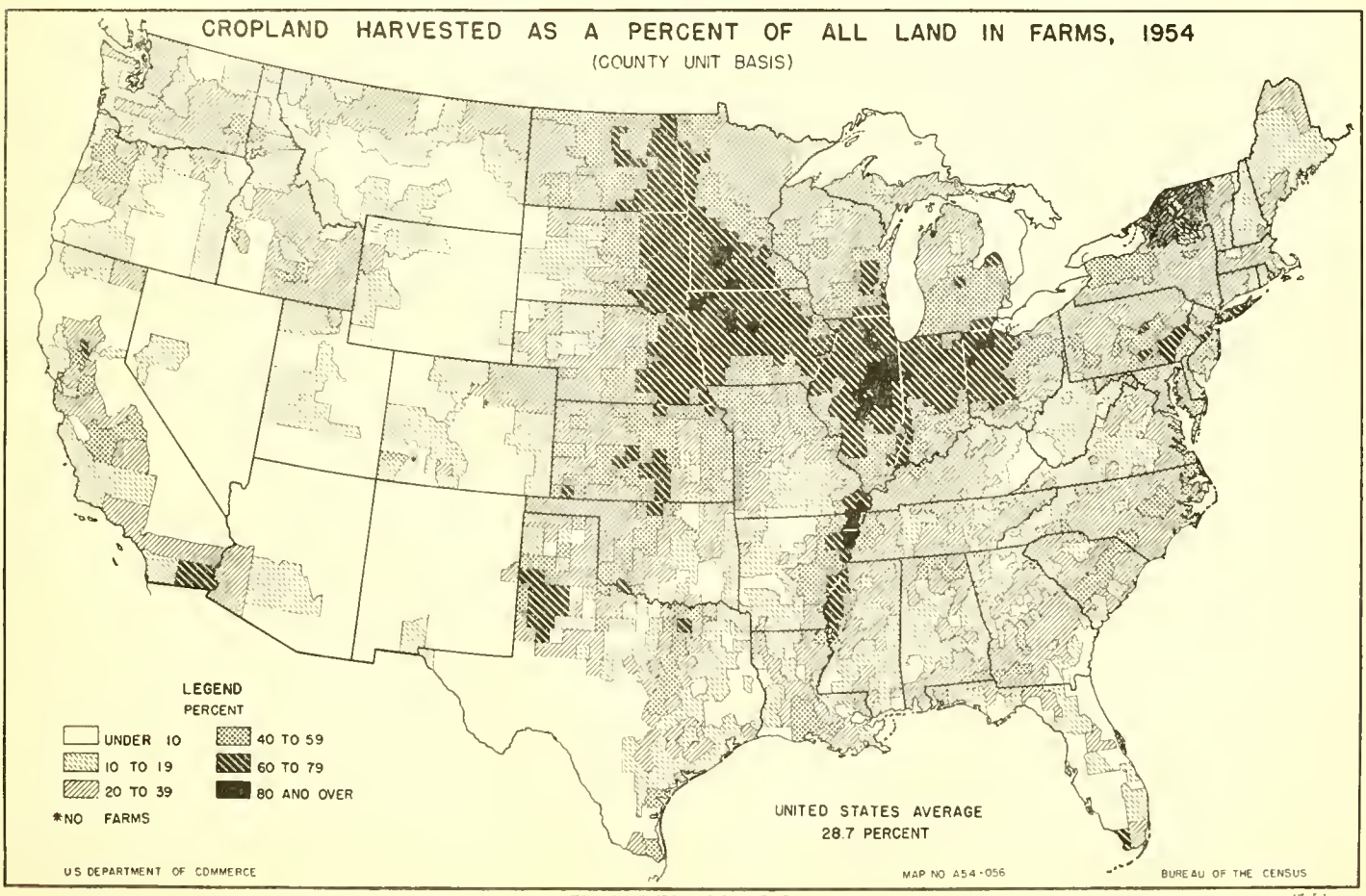

Figure 5.

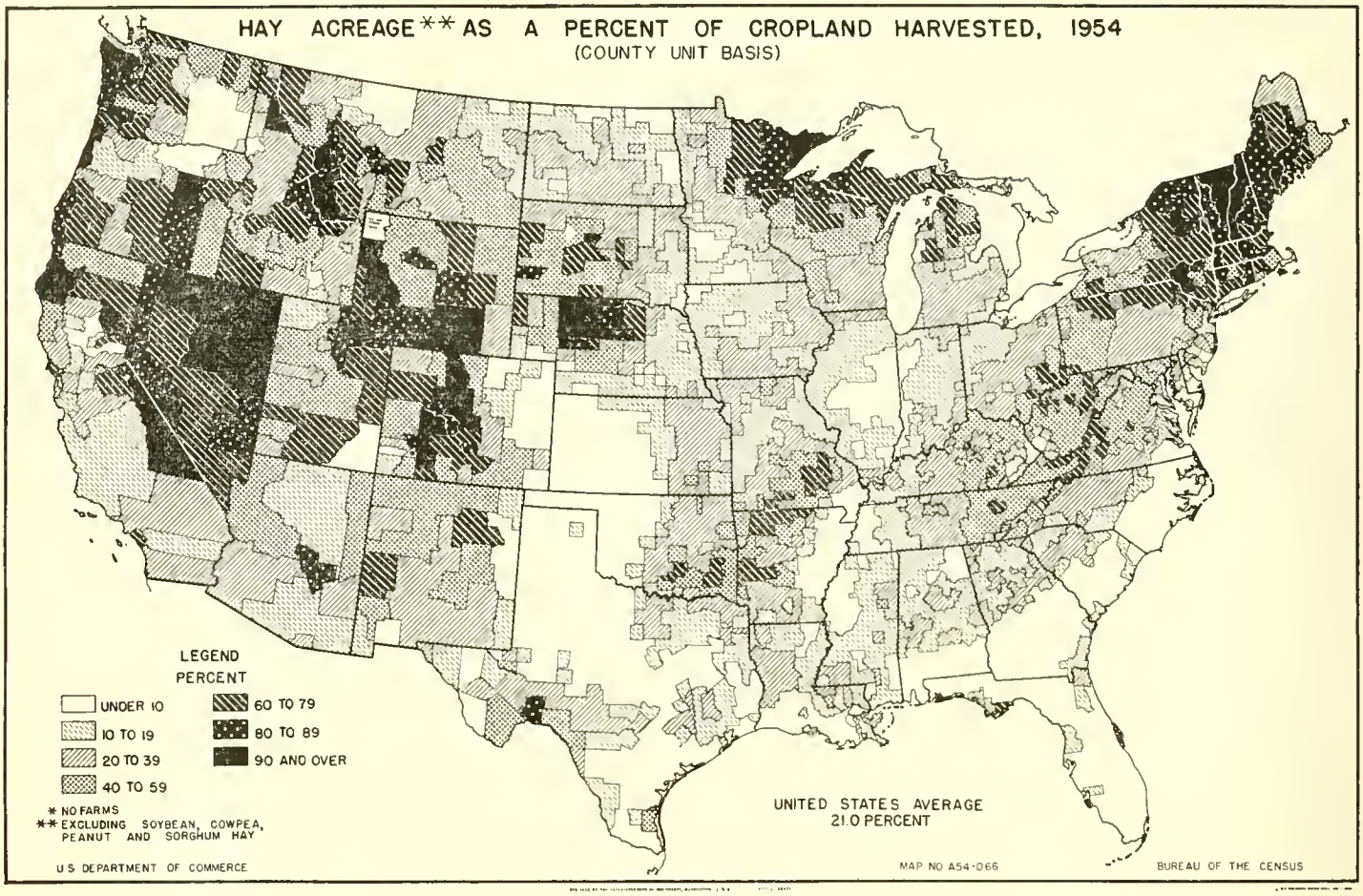

Figure 6.

CHARACTERISTICS OF DAIRY FARMING

Dairy farming may be characterized as an industry that can make use of practically any feed crop grown. Whether it be grain or hay, high-protein feed, or roughage, it can be utilized by milk cows. Basic to any feeding system with cows is the use of hays, other roughages, and pasturage. Dairy cows will produce 100 pounds of milk with the quantity of hay required to produce 110 pounds of beef or 125 pounds of mutton. This is accomplished with less grain than for any other class of livestock except sheep. The cow converts feed, much of which has a limited market, to a food product for which the market is almost universal.

In dairying there is also a greater use of family labor than in a business of similar size in any other livestock venture. This labor is needed day after day. In this way it may make possible the "marketing" of family labor which otherwise would remain unutilized.

The dairy farm produces both milk and meat. A farmer who raises his own replacements will produce one-half as much beef as a farmer with the same number of beef cows. In the aggregate, the sale of these cattle tempers the price of beef but it adds from 10 to 20 percent to the value of sales from the dairy herd.

Another characteristic of dairying is the production of an essential food for the human family that supplies many of the minerals and vitamins needed for satisfactory physical development. Milk is the most nearly universal food for growing children.

Dairy cows are ruminants and for high production must have large quantities of hay and other forages of good quality. One advantage of the major dairy-producing areas is the adaptability to hay production of their soil, topography, and climate. In most of the southern parts of the dairy areas a 3-year rotation of crops is practiced, of which one-third is hay. Moving north within the area the growing season becomes cooler and shorter. So corn is less practical as a part of the cropping system, and increasing proportion of the cropland is devoted to hay until, in the more northern parts, four-fifths to nine-tenths or more of the harvested cropland is used for hay (fig. 6).

Another way of increasing not only the roughage production of dairy farms but also the feed production per acre is to use the corn crop for silage rather than for grain. Only a small fraction of the large acreage of corn in the Corn Belt is cut for silage but a much larger proportion of a smaller corn acreage is so used in the dairy area (fig. 7).

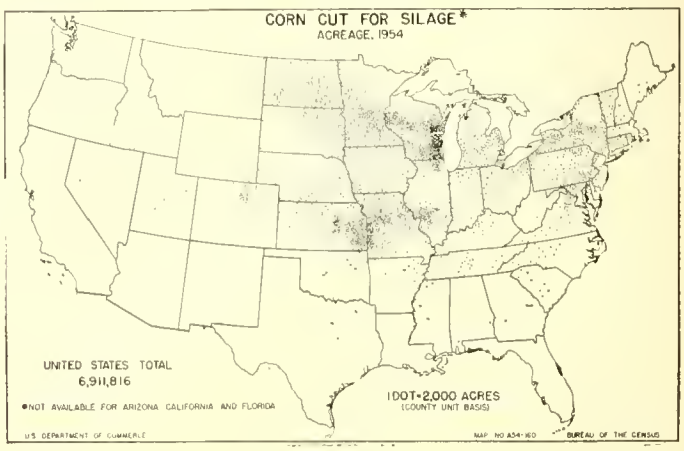

Figure 7.

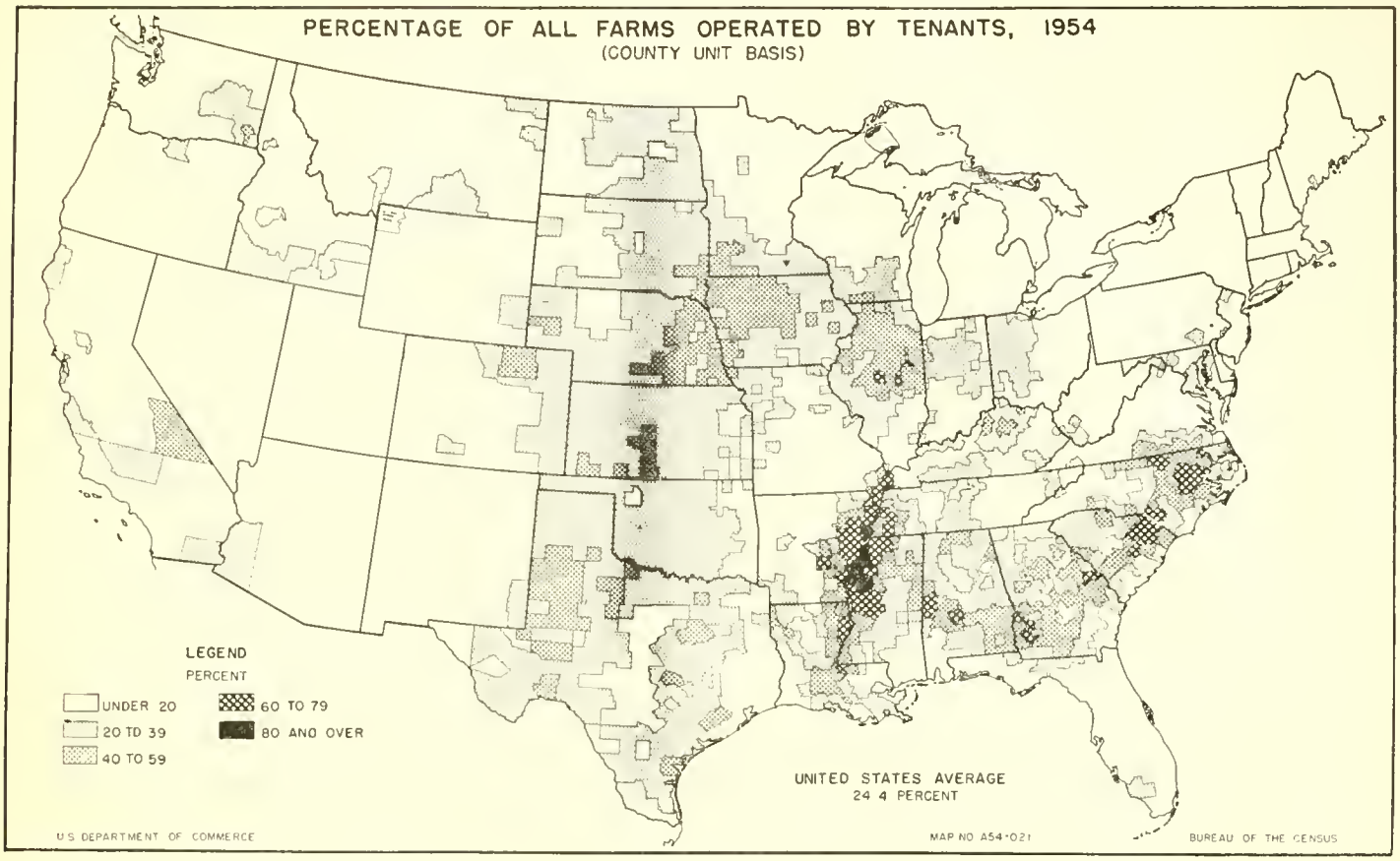

Figure 8.

Most dairy farmers are owner-operators (fig. 8). A dairy farmer with 20 to 30 cows usually finds his net income rather small to divide between two families. Then too, it is difficult to obtain renters with the necessary experience to feed and care properly for a dairy herd that has higher than average production. A third reason mentioned by some operators is the lack of money or credit necessary to carry a renter's share of the dairy herd and feed supply in addition to the machinery needed now for expeditious and effective farm operation. Whatever the reasons, the fact remains that opportunities for young men to begin farming as renters in the dairy areas are more limited than in such areas as the Corn Belt.

Developing a dairy herd through a breeding program may be a lifetime business for any dairyman. This is especially true if he expects to produce his own replacements. Dairy farming is not a flexible business. The main enterprise—milk production—cannot easily or quickly be changed.

Dairying requires a higher quality of labor than does the production of many farm products. Rough treatment or irregular feeding will reduce production. In some situations even the presence of strangers in the barn will temporarily reduce the milk flow.

LOCATION OF DAIRY AREAS

The large numbers of milk cows in the northeastern part of the country and west of Lake Michigan are first of all the results of physical features of climate, topography, and soil which make for a large percentage of the cropland in legumes and grasses. Milk cows can utilize these feeds more effectively than can most other classes of livestock. A second factor leading to this concentration is the competitive situation which reflects many factors, including the heavy consuming population in, or close to, these areas.

In the Great Plains areas and the South there are fewer milk cows than in many other regions. Pasture conditions, markets, and production alternatives have not especially favored milk production in many part of these regions.

The milk equivalent of all dairy-product sales has increased 2½ times since 1909, meanwhile milk sold as whole milk has increased fivefold, but sales of cream and butter have decreased to about one-half the quantity sold in 1909. The center of the whole-milk sales has moved westward from the northeastern to the north-central parts of the country (Table 8). Sales of whole milk from the Middle Atlantic geographic division accounted for nearly 40 percent of all whole-milk sales in 1909; by 1954, this percentage had dropped to 18. The slack was taken up by the geographic divisions to the West and South. The West North Central Division increased its proportion from 7½ percent of whole-milk sales to 13 percent, while the rest of the West and South increased its sales from 10.3 percent to 29.2 percent.

Table 8.—Distribution of Whole Milk Sold, by Geographic Divisions: 1909 to 1954

Item	1909	1919	1929	1939	1949	1954
Whole milk sold—million pounds	16,660	21,752	38,318	46,229	68,529	81,319
Percent sold, by geographic divisions:						
Total	100.0	100.0	100.0	100.0	100.0	100.0
New England	9.4	8.2	6.7	6.5	5.0	4.8
Middle Atlantic	38.7	34.7	25.2	22.8	18.6	18.0
East North Central	34.1	37.5	37.6	38.6	37.3	35.0
West North Central	7.5	5.2	7.4	7.4	11.8	13.0
South Atlantic	2.2	3.2	4.3	4.5	5.5	6.2
East South Central	1.2	1.3	2.9	3.2	4.1	4.5
West South Central	1.1	1.5	3.0	3.8	4.0	4.3
Mountain	1.6	1.9	3.0	3.1	3.2	3.7
Pacific	4.2	6.5	9.9	10.1	10.5	10.5

Cream and butter sales remained concentrated in the North Central States (Table 9). In 1909, approximately two-thirds of the sale of these products was from this region and by 1954, it accounted for 85 percent of all sales. Within the region itself notable changes did take place, however, in that the East North Central States reduced their proportion of sales from 29.6 percent of all sales to 10.1 percent, while the portion marketed by the West North Central Region increased from 33.6 percent to 74.9 percent.

Percentage figures alone do not tell the story of the changes that have taken place. Although the New England and the Middle Atlantic geographic divisions showed decreased percentages in sales of both whole milk and cream during this 45-year period, they actually increased total milk-equivalent sales around 50 percent, and the North Central States increased their aggregate sales by 2½ times. These figures show that whereas the sale of whole milk has become more widespread or dispersed over the United States, sales of cream and butter from farms have become more concentrated in the Midwest, especially in that part where dairying is a secondary enterprise on most farms.

The present distribution of the several dairy products emphasizes the importance of the East North Central States in the production of all dairy products, except creamery butter (Table 10).

Most of the butter is found in the West North Central States, as stated earlier, where there are not many dairy farms and milk cows are carried as secondary to other livestock or cash-crop enterprises. This region also is second in American-type cheese, while the Middle Atlantic States is second in foreign types of cheese.

A better picture of the distribution of these products is obtained by listing the States that take a lead in production. Butter is the most widely distributed. Of the total production, 21 States produce appreciable quantities in excess of 1 percent, and the midwestern States of Iowa, Minnesota, Nebraska, and Wisconsin each produces between 5 and 20 percent.

Outside the general dairy regions, small areas of concentration of milk cows are found near some of our larger population centers where economic or regulatory restrictions largely define the areas of production. Northwestern Washington and northern, central, and southern California are illustrations of areas where considerations of this nature are important. These areas show up more conspicuously when considered as centers of fluid-milk production or as sources of dairy income. They are not as conspicuous as areas of milk cow concentration or numbers of dairy farms because practically none of the milk produced in these special areas is used to make butter or for other manufacturing purposes (figs. 9 and 10).

There are no distinct milk producing areas, however, where limits to production are set by climate, soil, or topography, as is true of such commodities as cotton, peanuts, tobacco, and wheat. Some milk is produced in areas wherever there is adequate feed. It can be produced on grass or hay alone, or on any one of many combinations of grains and roughages. Milk production will be reduced if cows are exposed to excessive heat or extreme cold, but they can be protected from these extremes by suitable shelter or housing. Normal production conditions for dairy cows are varied and are fairly readily controlled.

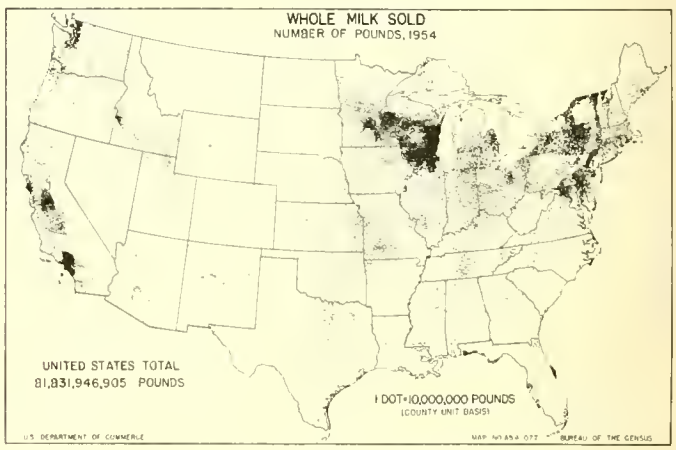

Figure 9.

Table 9.—Distribution of Cream and Butter Sold (Milk Equivalent), by Geographic Divisions: 1909 to 1954

Item	1909	1919	1929	1939	1949	1954
Cream and butter sold	21,719,622,813	25,338,498,676	35,887,863,909	30,130,700,650	15,478,918,639	12,385,171,660
Percent sold, by geographic divisions:						
Total	100.0	100.0	100.0	100.0	100.0	100.0
New England	6.1	3.7	1.6	0.7	0.3	0.3
Middle Atlantic	12.6	6.2	2.6	1.7	1.3	1.3
East North Central	29.6	31.8	22.7	21.6	14.1	10.1
West North Central	33.6	36.6	18.5	52.2	68.6	74.9
South Atlantic	3.6	3.4	3.3	2.6	2.1	1.9
East South Central	2.3	3.1	3.8	3.1	3.1	1.7
West South Central	3.2	3.5	6.6	8.0	4.5	3.7
Mountain	2.0	3.9	5.5	4.8	3.8	4.2
Pacific	7.1	7.9	5.4	5.3	2.2	2.0

Table 10.—Distribution of Milk Sold and Milk Products, for the United States and Geographic Divisions: 1954

Item	United States		Percent distribution by geographic divisions							
	Pounds	Percent	New England	Middle Atlantic	E. N. Central	W. N. Central	South Atlantic	South Central	Mountain	Pacific
Whole milk sold [1]	82,915,775,000	100.0	4.8	18.0	35.0	13.0	6.2	8.8	3.7	10.5
Creamery butter [1]	1,448,688,000	100.0	.3	3.4	29.9	50.3	1.0	5.1	4.5	5.5
American cheese [1]	1,042,345,000	100.0	.5	3.6	59.4	18.2	.4	11.1	3.6	3.2
Other cheese, mostly foreign types [1]	340,759,000	100.0	2.2	21.7	59.2	5.9	----------	4.2	3.4	3.4
Condensed and evaporated milk [1]	3,729,792,000	100.0	.8	8.2	38.2	11.6	7.6	16.0	4.6	13.0

[1] Source: Statistical Bulletin No. 167, 1955, U. S. Department of Agriculture. The uses are not mutually exclusive because some of the whole milk sold from farms was used in making manufactured products.

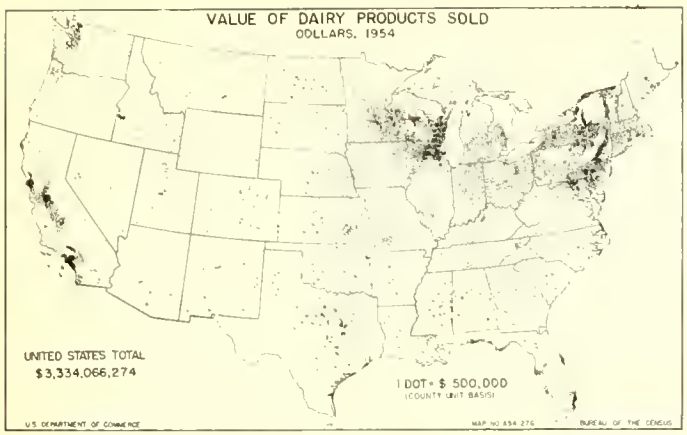

Figure 10.

The conditions that cause one group of farmers to sell fluid milk while another group sells cream or makes cheese must be considered in addition to the factors that make it possible to produce milk.

The areas that sell cream are ordinarily farther from consuming centers. They are no longer found in the central or main milk-producing areas because of the increased commercial utilization of whole milk rather than just the butterfat in the milk (fig. 11). North and South Dakota, Iowa, Missouri, Nebraska, and Kansas now produce more than 50 percent of the cream sold from farms and less than one-sixth of this comes from farms classed as dairy farms. This means that more than five-sixths of the marketed cream from these six States is from farms where the production of milk is secondary to some other crop or livestock enterprise. Fifteen years ago these six States produced 34 percent of the milk that was sold as cream or butter.

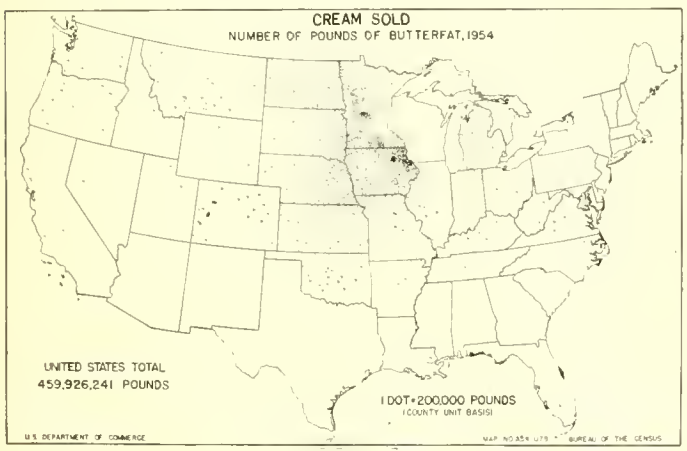

Figure 11.

Usually, considerable numbers of pigs or chickens are found on farms that sell cream. They furnish outlets for the skim milk left on the farm. Condenseries are ordinarily located in areas of heavier milk concentration where they have relatively large supplies of milk currently available and where they can utilize some of the market-milk surplus.

Cheese factories, on the other hand, seem to be set more by the background and habits of local producers than do other phases of dairying. Cheese factories are seldom located to make use of surplus milk from urban centers. The making of different types of foreign cheeses is closely associated with the nationalities that originate them.

The half million dairy farmers were about average in the use of resources. They comprised 16.5 percent of all commercial farms in the United States in 1954 (Table 11). They used but 9 percent of all land in farms and slightly more than 11 percent of harvested cropland, but they sold approximately 15 percent of the value of all farm products. One-fourth of the sale of all livestock and livestock products came from these farms as well as more than four-fifths of all whole milk sales. Only one-fifth the value of all cream sales was credited to these farms—the other four-fifths coming from milk cows on other than dairy farms. Crop sales were very small, amounting to slightly less than 3 percent of all crop sales and 10 percent of total sales from dairy farms.

The dairy farmers used their proportionate share of all farm labor, as well as about the same proportion of total capital investment in land, buildings, farm machinery, and livestock. Total farm real estate values were somewhat less than might have been expected because of the farm buildings required to house the dairy cattle and store feed for the herds during the long barn-feeding period. Total investment in livestock and machinery was higher than the percentage represented by the number of farms, and feed purchases were 50 percent higher.

Table 11.—Number and Use of Resources for all Commercial Farms and for all Dairy Farms in the United States and in Selected Subregions: 1954

Item	All commercial farms	Dairy farms			
		Total	Percent of all commercial farms	Selected subregions	
				Total	Percent of all dairy farms
Farms—number	3,327,889	548,767	16.5	385,429	70.2
All land in farms—thousand acres	1,032,493	97,228	9.4	63,685	65.5
Total cropland—do	431,585	51,186	11.9	33,664	65.8
Cropland harvested—do	321,587	37,008	11.5	25,250	68.2
Value of all farm products sold—million dollars	24,299	3,583	14.7	(NA)	(NA)
All crops sold,[1] total—do	12,076	341	2.8	(NA)	(NA)
All livestock and livestock products sold, total—million dollars	12,223	3,242	26.5	2,263	69.8
Dairy products sold—do	3,330	2,627	78.9	1,859	70.8
Whole milk sold—do	3,077	2,573	83.6	1,815	70.5
Cream sold—do	253	54	21.3	44	81.5
Milk cows—thousands	18,664	10,745	57.6	7,471	69.5
Man-equivalent of labor—number	4,891,935	789,811	16.1	558,820	70.8
Total capital investment—million dollars	110,545	14,611	13.2	10,056	68.8
Land and buildings—do	85,768	10,242	11.9	6,663	65.1
Implements and machinery—do	14,280	2,485	17.4	1,829	73.6
Livestock and poultry—do	10,497	1,881	17.9	1,564	83.0
Total specified expenditures[2]—do	8,900	1,594	17.9	1,074	67.4
Feed for livestock and poultry—do	3,682	899	24.4	606	67.4

NA Not available.
[1] Includes horticultural and forest products.
[2] Machine hire, hired labor, feed purchased, gasoline and other petroleum fuel and oil, commercial fertilizer, and lime.

MAJOR DAIRY REGIONS

Clearer understanding of dairy producers and dairy production requires that considerable attention be given to production conditions in several geographic regions and areas and on farms of several sizes. Differences in the technical phases of dairying, in production conditions, levels of income, and the organization of farms, are related to the size of the farms as well as to physical and economic features of the area.

The economic subregion is the basic unit for delineating the production areas. Because of the large number of economic subregions in which dairy farms predominate, those with somewhat similar physical and natural characteristics are combined, forming what will be called dairy regions.

The resources included in the study are only a part of those associated with the dairy industry of the United States. Sixteen percent of all commercial farms in this country were classed as dairy farms in 1954 and 385,429 or 70 percent were in areas covered by the sections analyzing the production situation in the major dairy regions and special dairy areas. They used 65 percent of the land in farms and 68 percent of the harvested cropland.

The dairy regions delineated here cover areas that are both important areas of dairy production and where dairy farms are a major segment of the agriculture.

The portion of the United States covered by the different dairy regions and areas includes approximately 90 percent of the 100 counties that have the largest number of milk cows and also highest total value of dairy products sold.

Some economic subregions have a fair representation of dairy farms which, in some circumstances, might be considered dairy regions but when considered in relation to the total number of farms within the subregion the proportion becomes rather small. Economic Subregion 69, for example, has 5 counties among the 100 leading counties in numbers of milk cows. This subregion has more than 33,000 beef and hog farms, 15,000 dairy farms, 15,000 cash-grain and field-crop farms, and 13,000 general farms. It has only 1 county among the 100 counties with the largest

Table 12.—Number of Milk Cows on Dairy Farms by Major Dairy Regions: 1954

Item	Major dairy region				
	Northeastern (Subregions 1, 2, 6, 7, 8, 10)	Eastern Ohio-Western Pennsylvania (Subregions 17, 27, 28, 29, 30)	Central Michigan-New York Lake Shore (Subregions 9, 49, 50, 64)	Northern Lake (Subregions 65, 67, 68, 88)	Northern Woods (Subregion 66)
Number of farms	67,521	40,636	35,605	124,501	28,001
Average number of milk cows per farm	24	15	18	18	13
Percent distribution of farms by number of milk cows:					
Total	100	100	100	100	100
Under 5	2	5	4	2	6
5 to 9	9	22	19	13	30
10 to 14	16	28	24	24	32
15 to 19	19	20	19	25	18
20 to 29	29	18	21	27	12
30 to 49	20	6	11	8	2
50 to 99	5	1	2	1	(Z)
100 and over	(Z)	(Z)	(Z)	(Z)	(Z)

Z Less than 0.5 percent.

sale of dairy products. This economic subregion is considered more a part of the cash-grain-livestock region than a dairy area.

There are 20 economic subregions in the Northern Dairy Region of the United States. This belt contains 54 percent of all dairy farms in the United States. In 1954, it accounted for nearly three-fifths of the total milk sales as well as more than two-fifths of all butter sales. It is hoped that a grouping of the 20 economic subregions into five larger areas will result in a clearer picture of the dairy industry than can be obtained through a presentation of the individual subregions (Table 12).

GENERAL CHARACTERISTICS

The topography of the whole Northern Dairy Region was transformed by glacial action which left a rolling to rough terrain, a mixed soil pattern, and a drainage system with some poorly drained spots intermixed with well-drained localities. Any one farm may have soils ranging from rather light and subject to drought, to heavy soils with good water-holding capacities; places with little or no outlet for surface water to well-drained fields; small irregular fields to large, well-laid-out fields where the bigger pieces of machinery can be used effectively; and smooth easily cultivated fields to fields so full of stones and boulders or so rough as to be useful only for grazing.

Throughout this Northern Dairy Region there is somewhat less intense summer heat than in the Corn Belt. It has shorter growing seasons and colder winters. Average annual precipitation is around 25 inches in the western part. It increases somewhat irregularly eastward until 40 inches is recorded from Pennsylvania eastward. All livestock and practically all feed are placed under roof during the long winter. The producer's markets range from an almost completely fluid-milk market in the eastern to butter or other manufactured dairy products on the western edge of the belt. As the higher priced dairy markets are in the east, the surplus production from the western part finds outlets there.

A milking herd is the obvious characteristic common to all dairy farms. A variety of crops, a goodly supply of pastureland, and a considerable amount of family labor, are found on dairy farms of all economic classes. Different secondary or minor enterprises are found in the different subregions but they seem to fit into the organization with little special or unusual demands upon capital or labor.

VARIATION IN FARM CHARACTERISTICS

The smallest herds among the major dairy regions are in the Northern Woods area, Economic Subregion 66, where the average herd has 13 milk cows. More than two-thirds of these farms have fewer than 15 cows and only 14 percent have more than 20 cows. The Northeastern Dairy Region not only has the most cows per herd but it has the fewest small herds and the most large ones. None of the Northern Dairy Regions have as many as one-half percent of the farms with herds in excess of 100 cows per herd.

The range in total incomes as well as per crop acre in 1954 indicates a wide difference in resources and perhaps in the effectiveness with which resources are used (Table 13). The Economic Class I farms had total incomes averaging from $30,000 to $36,000 for the different regions or $95 to $136 per acre of cropland. Economic Class VI, on the other hand, had total incomes ranging from $750 to $903 per farm or $19 to $23 per crop acre. The incomes of the other four classes were between these two extremes both in total income per farm and per crop acre.

Table 13.—Size of Dairy Farm by Major Dairy Regions: 1954

Item	Major dairy region				
	Northeastern (Subregions 1, 2, 6, 7, 8, 10)	Eastern Ohio-Western Pennsylvania (Subregions 17, 27, 28, 29, 30)	Central Michigan-New York Lake Shore (Subregions 9, 49, 50, 64)	Northern Lake (Subregions 65, 67, 68, 88)	Northern Woods (Subregion 66)
Number of farms	67, 521	40, 636	35, 605	124, 501	28, 001
Average per farm:					
Land in farms acres	218	153	157	157	186
Cropland harvested acres	70	62	87	74	57
Gross sales dollars	7, 256	5, 389	7, 011	5, 299	2, 999
Investment in—					
Land and buildings dollars	13, 781	15, 112	23, 136	15, 212	8, 959
Machinery do	4, 889	4, 706	5, 897	4, 797	3, 694
Livestock do	4, 678	3, 319	3, 759	4, 160	2, 735
Total	23, 348	23, 137	32, 792	24, 169	15, 388
Man-equivalent	1. 5	1. 4	1. 3	1. 4	1. 3
Number of—					
Milk cows	24	15	18	18	13
Animal units	32	24	28	30	20
Total investment per milk cow dollars	973	1, 542	1, 822	1, 343	1, 184

The different levels of income among these dairy areas can be accounted for partly by the difference in milk sales per cow as well as the number of cows per farm (Table 14). Smaller herds sell less milk per cow whether they are in areas with smaller average herds or with the larger ones. This holds for every area and every economic subregion. When farms are grouped by size—economic class—two things show persistently. The economic classes with the lower total incomes have the smaller herds and sell less milk per cow. It is logical to expect smaller farms to have consistently smaller herds. It is not necessary, however, for milk sales per cow to be so much less than for the larger herds. Good sires and proper feeding can be used in production on smaller farms.

Table 14.—Milk and Cream Sales for Dairy Farms, by Major Dairy Regions: 1954

Item	Major dairy region				
	Northeastern (Subregions 1, 2, 6, 7, 8, 10)	Eastern Ohio-Western Pennsylvania (Subregions 17, 27, 28, 29, 30)	Central Michigan-New York Lake Shore (Subregions 9, 49, 50, 64)	Northern Lake (Subregions 65, 67, 68, 88)	Northern Woods (Subregion 66)
Number of farms	67, 521	40, 636	35, 605	124, 501	28, 001
Milk and cream sold per milk cow:					
Total dollars	264	251	259	201	174
Whole milk dollars	263	249	256	195	150
Cream do	1	2	3	6	24
Percent of total	(Z)	1	1	3	14
Milk equivalent pounds	6, 526	6, 298	7, 261	6, 594	5, 674
Price per cwt. (milk equivalent)	4. 05	3. 99	3. 57	3. 05	3. 07

Z Less than 0.5 percent.

The decreased income per cow is the result of lower production (sales) per cow as well as the result of somewhat lower prices for milk. The lower price is not the result of selling cream or butterfat except in Economic Subregion 66. In this area the three groups of smaller farms obtain from 12 to 44 percent of total milk income from the sale of cream. Only in Economic Class VI of the Lake Dairy Region (Economic Subregions 65, 67, 68, and 88) did farmers receive as much as 15 percent of total milk sales from this source. In other subregions of the dairy belt the small farms received about the same percentage of the total milk income from the sale of cream as did the larger farms.

A grouping of dairy farms by economic class is a good measure of the size of business. The number of cows per herd decreases with the economic class until, in most subregions, from 70 to 90 percent of all farms in Economic Classes V and VI have fewer than 15 cows and most of these farms have fewer than 10 cows. These herds are so small that net farm incomes permit only a modest living.

Most of the dairy herds are on family-size farms where the farmer and his family do practically all the farmwork. Although herds are becoming larger over the years, there is little evidence that the family-size dairy farm is passing out of the picture. Improved methods of handling both the crop work and the dairy herds indicate that the so-called family-size herd, even though larger, will continue to be the typical producing unit.

The man-equivalent of these farms also indicates a family-size farm (Table 15). Hired labor equivalent to one-half man or more per year was found on the three classes of farms with the largest incomes. There was 60 percent more hired labor on farms in the Northeastern Dairy Region than in other regions, probably because of more cows. Hired labor exceeds family labor only in Economic Classes I and II of the major dairy regions.

Table 15.—Labor Force on Dairy Farms by Major Dairy Regions: 1954

Item	Major dairy region				
	Northeastern (Subregions 1, 2, 6, 7, 8, 10)	Eastern Ohio-Western Pennsylvania (Subregions 17, 27, 28, 29, 30)	Central Michigan-New York Lake Shore (Subregions 9, 49, 50, 64)	Northern Lake (Subregions 65, 67, 68, 88)	Northern Woods (Subregion 66)
Number of farms	67, 521	40, 636	35, 605	124, 501	28, 001
Total man-equivalent	1. 5	1. 4	1. 3	1. 4	1. 3
Operator	. 7	. 7	. 7	. 7	. 7
Unpaid family help	. 4	. 5	. 3	. 5	. 5
Hired labor	. 4	. 2	. 3	. 2	. 1
Average per man-equivalent:					
Total cropland acres	62	56	88	66	59
Total sales dollars	4, 837	3, 849	5, 393	3, 785	2, 307
Milk cows number	16	11	14	13	10

To the extent that farm mechanization is measured by the use of specified items of farm machinery and home facilities, some differences are noted among the major dairy regions (Table 16). Most obvious is the use of fewer pieces of the specified items of equipment on farms in the Northern Woods Region. Practically as many farms have automobiles and farm tractors but fewer have such items as pick-up hay balers, motortrucks, and milking machines. Almost as many farms are electrified in this area as in any other of the dairy regions. The lack of comparable net incomes probably accounts for fewer telephones, home freezers, and television sets.

The lowered need for some of the larger items of farm machinery may well account for their disappearance from the lists of machinery on the smaller farms all over the dairy belt. It is much easier to arrange with a neighbor to have 5 or 10 acres of some crop harvested than if the field contained 20 or 30 acres. On the other hand, the number of farms having home conveniences probably is closely associated with net income of the operator.

Table 16.—Farm Mechanization and Home Conveniences on Dairy Farms, by Major Dairy Regions: 1954

Item	Major dairy region				
	Northeastern (Subregions 1, 2, 6, 7, 8, 10)	Eastern Ohio-Western Pennsylvania (Subregions 17, 27, 28, 29, 30)	Central Michigan-New York Lake Shore (Subregions 9, 49, 50, 64)	Northern Lake (Subregions 65, 67, 68, 88)	Northern Woods (Subregion 66)
Number of farms	67,521	40,636	35,605	124,501	28,001
Percent of farms with—					
Milking machine	90	72	83	82	62
Power grinder	8	29	25	22	20
Electric pig brooder	1	3	4	6	2
Farm tractors	89	86	95	94	91
Automobiles	84	82	92	93	85
Field forage harvesters	17	12	23	20	7
Motortrucks	62	53	55	50	42
Pickup balers	35	33	34	18	17
Grain combines	13	27	50	21	14
Corn pickers	3	21	28	17	3
Telephone	83	73	79	68	52
Electricity	99	96	99	97	95
Television	59	56	66	40	22
Piped running water	90	82	89	70	63
Home freezer	50	51	54	42	34

There are fewer farm homes with piped running water, home freezers, and television sets on the smaller farms. The levels of family income often will not permit their purchase. The prevalence of electricity on both small and large farms partly reflects the Rural Electrification Administration's program to electrify every farmstead.

The age pattern of dairy-farm operators does not vary greatly among the diary regions (Table 17). Very few operators under 25 years of age are found in any area of the dairy belt; from 1 to 2 percent is the usual number. The largest number of operators under 25 years of age within any economic subregion does not exceed 3 percent. The 25- to 34-years-old group when considered with these younger men suggests a possible trend away from dairy farming on the part of the young people.

The Northern Dairy Regions as a whole have more dairy farm operators over 65 years old than under 35 years, and four times as many of the older operators as there are of the youngest group. If more young men do not take up dairying we may expect a greater reduction in the number of dairy farms than has already taken place. The obvious alternative is for the older operators to continue farming much beyond the usual retirement age. Most of the young men who are in dairying are not on the smallest farms, Economic Classes V and VI, they are on the middle-sized farms where chances of success are good. The smaller units are mostly in the hands of older operators.

These figures suggest a continuing reduction in the number of dairy farms because some of the older men who drop out will not be replaced by younger men. Larger farms and bigger dairy herds will doubtless continue to be the tendency so that the industry will be maintained or expanded even though many of the smaller farms disappear.

Table 17.—A Distribution of Operators by Age, for Dairy Farms by Major Dairy Regions: 1954

Item	Major dairy region				
	Northeastern (Subregions 1, 2, 6, 7, 8, 10)	Eastern Ohio-Western Pennsylvania (Subregions 17, 27, 28, 29, 30)	Central Michigan-New York Lake Shore (Subregions 9, 49, 50, 64)	Northern Lake (Subregions 65, 67, 68, 88)	Northern Woods (Subregion 66)
Number of farms	67,521	40,636	35,605	124,501	28,001
	Percent distribution				
Operators by age:					
Total	100	100	100	100	100
Under 25 years	2	2	2	2	1
25 to 34 years	13	13	13	16	12
35 to 44 years	23	23	24	25	24
45 to 54 years	25	24	24	26	23
55 to 64 years	21	21	21	20	22
65 years and over	16	17	16	11	18

The usual cropping patterns of these farms differ from region to region (Table 18). The cropping systems in each are built around the three-crop system of hay, corn, and small grain. The livestock are practically all dairy animals. From 5 to 15 percent of the animal units are hogs, poultry, and sheep; the dairy herd accounts for the remainder.

Table 18.—Land, Uses of Land, and Livestock on Dairy Farms, by Major Dairy Regions: 1954

Item	Major dairy region				
	Northeastern (Subregions 1, 2, 6, 7, 8, 10)	Eastern Ohio-Western Pennsylvania (Subregions 17, 27, 28, 29, 30)	Central Michigan-New York Lake Shore (Subregions 9, 49, 50, 64)	Northern Lake (Subregions 65, 67, 68, 88)	Northern Woods (Subregion 66)
Number of farms	67,521	40,636	35,605	124,501	28,001
Average per farm:					
Land in farms, acres	218	153	157	157	186
Cropland harvested acres	70	62	87	74	57
Total land pastured acres	97	59	46	59	81
Cropland pastured acres	18	12	22	15	16
Cropland not harvested and not pastured, acres	5	4	5	3	5
Total cropland, do.	93	78	114	92	78
Animal units	32	24	28	30	20
Livestock, number—					
All cattle	38	27	32	32	24
Milk cows	24	15	18	18	13
Chickens	53	96	88	109	38
Hogs	1	6	6	13	2
Sheep	1	3	2	2	2
Percent of cropland harvested in—					
Corn for all purposes	12	23	28	27	11
Corn for grain	1	17	19	14	4
Small grains	12	29	31	32	21
All hay	74	45	35	38	65
Other crops	2	3	6	3	3

The dairy farms of Eastern Ohio-Western Pennsylvania and the Lake Regions have the greatest diversification in livestock. Each has around one-seventh of the animal units in poultry and hogs. The Northeastern Dairy and the Northern Woods Regions have around one-fifteenth of the livestock classes as other livestock; poultry accounts for most of this. These two regions grow less corn and small grains and more hay than do the others. The northeastern dairymen do this as a matter of choice, finding it to their advantage to ship in the feed grains and raise more hay. Dairymen in the Northern Woods find their growing season and summer temperature best suited for growing hay. The dairymen of the Lake Region have more hogs and poultry than do the other regions. This is the only region of the dairy belt where raising pigs is a sizeable business venture.

Practically all dairy-farm operators hope to become owners and later to clear their farms of debt. This can be done only when there is a surplus from the farm income above that needed to pay farm expenses and meet the cost of family living. Differing rule-of-thumb procedures have been set up in the past to help prospective purchasers determine the possibility of paying-out once the farm is bought. One of the simplest of these, though not the most accurate, is to express the investment cost of the farm in terms of the yearly gross income. Table 19 shows some of these relationships for the dairy farms of the various regions of the Northern Dairy Belt in terms of the 1954 situation.

Table 19.—Number of Years Required for Gross Income to Equal Total Investment for Dairy Farms, for Major Dairy Regions: 1954

Item	Major dairy region				
	Northeastern (Subregions 1, 2, 6, 7, 8, 10)	Eastern Ohio-Western Pennsylvania (Subregions 17, 27, 28, 29, 30)	Central Michigan-New York Lake Shore (Subregions 9, 49, 50, 64)	Northern Lake (Subregions 65, 67, 68, 88)	Northern Woods (Subregion 66)
Number of farms	67,521	40,636	35,605	124,501	28,001
Years required for gross income to equal investment in—					
Land and buildings	1.9	2.8	3.3	2.9	3.0
Total investment	3.2	4.3	4.7	4.6	5.1

The Central Michigan-Northern New York Lake Shore Region has the highest real estate value per farm. This area also shows the most years required for total incomes to equal real estate values. It compares favorably with the Northern Lake Region, however, in terms of ratio of income to total investment. The region with the largest number of years required for gross income to equal total investment is Economic Subregion 66 which has both the lowest real estate value and smallest total farm income.

Unusually small farms must necessarily have larger incomes in terms of real estate values if there is to be any surplus for payment of debt. The operators of small farms ordinarily have as many children as those who operate larger farms and their basic living costs are usually just as high. On the other hand, operators of the larger farms can pay-out with a smaller yearly income in terms of real estate values.

The trend throughout the whole Northern Dairy Belt is definitely toward fewer and bigger farms and larger herds. For example, there were only 130,000 farms in Wisconsin in 1954 with some milk cows in comparison with 143,000 in 1950. The size of herds during this 4-year period increased from 14 to 17. The same trend is found in Minnesota where the number of farms with milk cows decreased from 143,000 to 123,000 and the average number of cows per farm increased from 9 to 11. In New York, which may well be called the center of the eastern part of the dairy belt, the number of farms with milk cows dropped from 85,600 in 1950 to 71,800 in 1954 and the average number of cows per farm increased from 14 to 18. The trend toward fewer farms and more milk cows per farm may well continue.

Most dairy farms are not large when expressed in terms of dollars invested or in physical units. The 296,000 dairy farms in the Northern Dairy Regions show an average real estate value of approximately $15,000 and a total estimated value of $27,000 for land, buildings, machinery, and livestock. Their productive capacity in terms of harvested cropland, number of livestock or man-equivalent, also shows the average farm to be of modest size. If a dairy farmer averages $100 total income per acre of harvested cropland he is doing well. Income larger than this indicates a farmer with crop production that is better-than-average or a highly productive herd, or an especially good market for milk.

SIZE OF BUSINESS

Size of business is important because it affects the income available for family living and savings. A small volume of business, whether it be in dairying, other livestock, or crops, has only one advantage over larger units—losses are small. By the same token savings are also small.

Size may be measured in any of several ways. The acreage of land used for crop production, the number of milk cows on a dairy farm, or the capital invested in the business, are measures of size in different situations. Gross farm sales were used in the 1954 Census for grouping farms into economic classes. Six classes were established with gross farm incomes ranging from $25,000 or more for Economic Class I to the smallest income group with $250 to $1,199, Economic Class VI.

Notable differences are shown among the five major dairy regions when grouped by economic class. The Northeastern Dairy Region has the fewest small farms in Economic Classes V and VI, being 12 and 3 percent, respectively. On the other hand, 53 percent of the farms in the Northern Woods Region are in the two smallest classes, while less than 2 percent are in the two largest classes. The number of farms of the three remaining major dairy regions are between these two extremes. They have more farms in the medium-sized groups, Economic Classes III and IV.

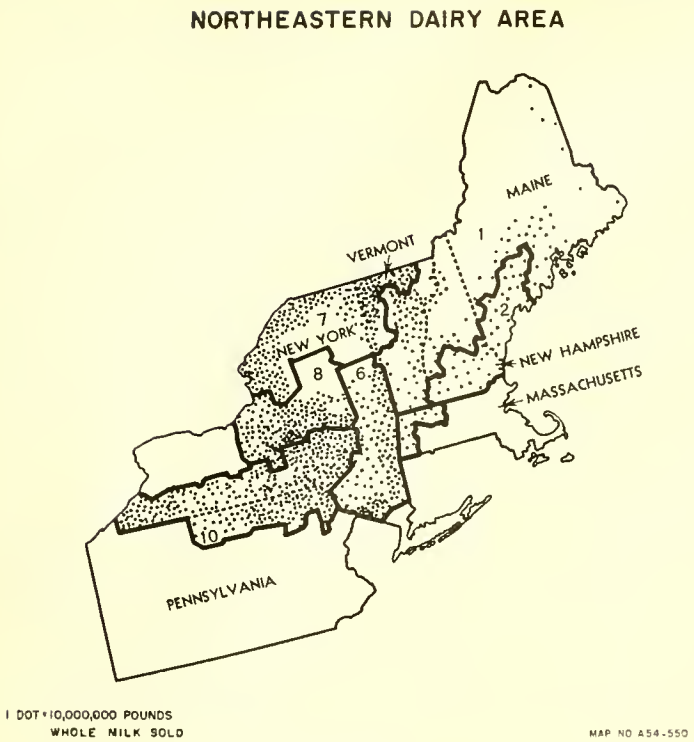

Figure 12.

THE NORTHEASTERN DAIRY REGION
(Economic Subregions 1, 2, 6, 7, 8, 10)

This region, comprises Maine, New Hampshire, Vermont, most of New York, and parts of Pennsylvania and Massachusetts. It is the oldest dairy region of the United States. The soils are generally classed as lacking in natural fertility although they respond well to the use of farmyard manure and commercial fertilizers. Frequent summer rains, however, make it difficult to put up hay of the best quality. The topography generally is rolling to hilly so the fields for harvested crops are fairly small and much land is best suited for pasture.

The region has about two-fifths of the farmland in harvested crops and one-third in pasture. Occasional small localities are found where cash crops or poultry are more important sources of income than dairy. Aroostook County, Maine, is definitely a potato county with only 7 percent dairy farms. Five counties—in southern Maine, in New Hampshire, and in Vermont—have more poultry than dairy farms and in each of these counties the total sale of poultry products was greater than the sale of milk in 1954. In none of these localities does the poultry flock compete seriously with the dairy herd for land. Both types of farms depend on feeds shipped in from other parts of the country and the poultry flock uses very little land. The lake shore country of western New York has a concentration of fruit and vegetable farms and much of the resources is represented by these farms. By and large, however, every part of the Northeastern Dairy Region is devoted to dairying.

The movement in this area away from the production of other livestock and cash crops and into the production of milk for fluid consumption, is explained by the fact that the whole eastern part of the country has become highly urbanized. There are so many milk cows that the local feed supplies can meet only a part of the requirements even though the production of harvested crops and grass has been increased through the use of fertilizers. Dairymen ship in most of the grain and concentrates used. Thus, the size of business is increased by the purchase of feeds from the Midwest.

The region still produces around one-fifth of the foreign types of cheese and cream cheeses of the country. One-half of that produced here is cream cheese. The region produces less than 4 percent of the butter and American types of cheese and about 8 percent of the condensed and evaporated milk. Milk cow numbers increased from 1.6 million in 1950 to 1.7 million in 1954 whereas, the number of dairy farms decreased from 75,494 to 67,521. Fewer and larger farms seem to be the trend throughout. Approximately one-seventh of the whole-milk sales of the United States are from this region.

The organization of these farms as reflected by income and expenses shows a great deal of comparability throughout the region. Maine and New Hampshire—Economic Subregion 1—have the smallest farm incomes both per farm and per acre of total cropland, averaging $6,473 per farm and $80 per acre of cropland. The largest incomes are in Economic Subregion 4 in the Hudson River Valley, where the average total value of sales is $10,632. Every economic subregion of the area shows the extreme specialization of the dairy farms. Economic Subregion 1 not only has the smallest average income but it shows slightly more tendency to diversify its income, with 82 percent of the total income from the sale of milk, whereas all the other subregions show from 84 to 88 percent. Crop sales from dairy farms amount to less than 5 percent in every part of the area. Dairy farmers in central New York obtained 4.3 percent of their income from these sources while those in northern New York obtained the least, 1.7 percent.

The wide range in size as shown by economic class tabulation suggests that nearly 15 percent of the dairy farmers of this region are accepting modest incomes while 20 percent are making good incomes, Economic Classes I and II. There is little tendency for the smaller farms to diversify more than the larger except for those in Economic Class VI. Only 71 percent of the income of this group is from milk sales in comparison to an average of 86 percent for the other classes. Yet no one enterprise other than sales of cattle accounted for more than a minor part of the other income. (Tables 20 and 21.)

Feed purchases accounted for three-fifths or more of the specified expenses for every economic subregion and for most economic classes of the area. This amounts to $25 per acre of total cropland, or $97 per cow, and emphasizes the point already made that this is a feed-deficit region. The producing of this quantity of feed would require practically double the present cropland. The range in specified expenses of the different economic classes is as wide as the range in income.

Table 20.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Northeastern Dairy Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	67,521	1,215	12,525	24,658	19,447	7,965	1,711
Gross sales—							
Per farm dollars	7,256	36,282	14,181	7,163	3,809	2,005	903
Per crop acre do	78	136	98	76	56	39	21
Percent of gross sales from dairy products	85	84	85	86	86	83	71
Sales per farm:							
Milk dollars	6,202	30,500	12,096	6,175	3,273	1,657	645
Cattle and calves do	498	2,987	944	465	267	163	108
Hogs do	13	48	25	14	7	6	7
Poultry products except eggs dollars	39	312	81	36	14	8	4
Eggs do	157	822	357	143	66	33	24
Sheep do	7	75	11	6	3	2	5
Other livestock and livestock products dollars	6	29	9	7	4	6	3
Total, livestock and livestock products dollars	6,922	34,773	13,523	6,846	3,634	1,875	796
Field crops do	166	886	374	153	68	36	21
Other crops [1] do	98	421	168	90	58	67	70
Total crops do	264	1,307	542	243	126	103	91

[1] Includes horticultural and forest products.

Table 21.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Northeastern Dairy Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	67,521	1,215	12,525	24,658	19,447	7,965	1,711
Average per farm:							
Machine hire dollars	119	185	149	132	104	78	49
Hired labor do	664	7,023	1,570	500	186	83	24
Feed do	2,332	10,259	4,398	2,323	1,315	791	431
Gas and oil do	368	1,402	633	376	238	146	75
Fertilizer do	191	993	409	183	86	48	24
Lime do	52	255	109	52	24	12	11
Total do	3,726	20,117	7,268	3,566	1,953	1,158	614
Average per crop acre:							
Machine hire do	1	1	1	1	2	2	1
Hired labor do	7	26	11	5	3	2	1
Feed do	25	38	30	25	19	16	10
Gas and oil do	4	5	4	4	3	3	2
Fertilizer do	2	4	3	2	1	1	1
Lime do	1	1	1	1	(Z)	(Z)	(Z)
Total do	40	75	50	38	28	24	15

Z Less than 0.50.

The net incomes are larger than they would be if the specified expenses were expanded to include other necessary items and cost (Table 22). Further, the average income for the area does not fully reflect the variation in effectiveness in the use of resources. The dairymen in Economic Subregion 1, with an average net income of $2,871, have only two-thirds the income of the dairymen in Hudson Valley, Subregion 6, and Central New York, Economic Subregion 8. To the extent that net income is a measure of efficiency or effectiveness in the use of resources, the farmers of these two economic subregions are using to good advantage the resources at their command. Another indication of effectiveness in the use of resources is the total investment in terms of gross sales. Economic Class I farmers used a total investment of $221 to obtain $100 income. This ratio was increased with the smaller units until farmers in Economic Class VI used $1,039 of capital investment to obtain $100 total income.

Table 22.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the Northeastern Dairy Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	67,521	1,215	12,525	24,658	19,447	7,965	1,711
Gross sales per farm dollars	7,256	36,282	14,181	7,163	3,809	2,005	903
Specified expenses per farm do	3,726	20,117	7,268	3,566	1,953	1,158	614
Gross sales less specified expenses per farm dollars	3,530	16,165	6,913	3,597	1,856	847	289
Gross sales per man-equivalent	4,837	6,846	6,116	4,775	3,163	2,228	1,003
Total investment—							
Per farm dollars	23,348	80,128	37,759	23,399	16,383	12,625	9,347
Per man-equivalent do	15,565	15,118	17,163	15,599	14,894	14,028	10,386
Per $100 gross sales do	320	221	266	325	431	631	1,039
Percent of sales of dairy products from cream	(Z)	(Z)	(Z)	(Z)	(Z)	2	12
Milk sales per cow:							
Dollars	264	405	309	254	204	160	89
Pounds (milk equivalent)	6,526	8,036	7,549	6,441	5,361	4,361	2,782

Z Less than 0.5 percent.

From three-fifths to three-fourths of the farms in the different economic subregions used fertilizer, the smallest number being in Northern New York, Economic Subregion 7, while in Economic Subregions 8 and 10, 77 percent used some fertilizer. Some fertilizer was applied to 28 percent of the harvested cropland.[2]

Table 23.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for the Northeastern Dairy Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	67,521	1,215	12,525	24,658	19,447	7,965	1,711
Fertilizer:							
Percent of farms using	71	90	88	79	62	46	32
Tons used per farm reporting	5	21	9	4	3	2	1
Acres upon which used per farm reporting	28	107	47	25	16	12	8
Average per acre fertilized:							
Pounds	360	400	380	360	360	360	360
Cost dollars	9.50	10.29	9.83	9.24	8.90	8.99	8.89
Lime:							
Percent of farms using	39	67	59	45	29	19	15
Acres upon which used per farm reporting	15	37	20	13	10	9	7
Average per acre limed:							
Pounds	2,900	3,020	2,980	2,900	2,700	2,700	2,500
Cost dollars	8.98	10.19	9.46	8.84	7.84	7.54	9.97

The larger farms fertilized a few percentage points more of its cropland than the smaller farms, but the rate of application was practically the same for large and small farms. Slightly more than one-half as many farms used lime as used fertilizer. Nominal applications of 350 to 400 pounds per acre were used (Table 23).

[2] Including cropland pastured.

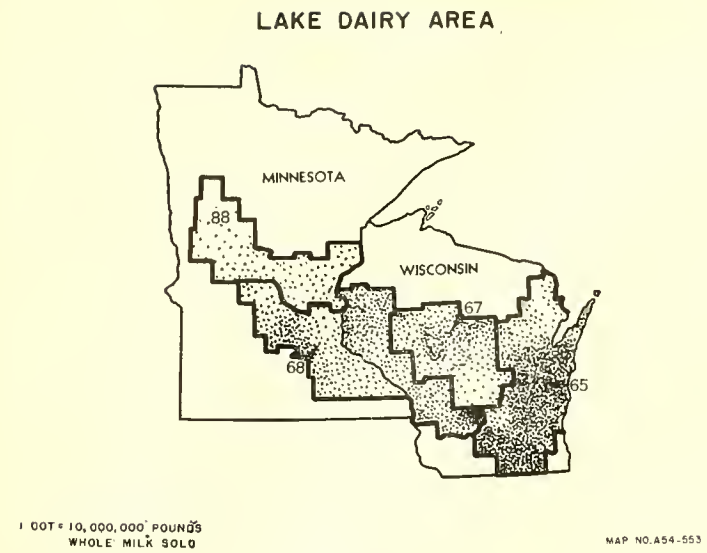

Figure 13.

THE NORTHERN LAKE REGION
(Economic Subregions 65, 67, 68, 88)

Here, as in the Northeastern Dairy Region, are the glacial soils, shallow and lacking in natural fertility. They probably are somewhat more fertile than the former and respond to good cultural practices. Some of the lighter soils ordinarily yield one-half to three-fourths of the production of the heavier soils. Summer rainfall and temperatures favor the production of hays and other roughages, so one-third of the total cropland is used for these purposes. Only the Northern Woods Region and the Northeastern Dairy Region exceed this proportion, with one-half or more of the total cropland used for hays.

Within the last generation this area has greatly increased the quantity of milk marketed as fluid milk but it has not changed the proportion of its income from dairying. It still has about the same proportion of the income from crops, poultry, and other livestock.

The different market outlets for milk when compared with those in the Northeastern Dairy Region are shown by the proportions of such products as butter and cheese sold from the respective areas. The Northern Lake Region produces approximately twice as much milk as the Northeastern Region. Yet it markets 10 times as much milk in the form of butter and more than 16 times as much cheese. Even so, the fluid-milk market is taking a continuously increasing share of milk production of the area.

Although the averages of these economic subregions show considerable uniformity, the number of farms in the two extreme economic classes varies greatly. Economic Subregion 65 has the most large farms, 14 percent, and the fewest small farms, 13 percent, Economic Subregion 88 has only 2 percent large farms and nearly 40 percent very small farms. This difference between the two subregions is to be expected, since Subregion 65 encompasses most of the eastern Wisconsin industrial concentration with its better local markets and higher land values, while Subregion 88 is a border area between the Northern Woods and the more completely agricultural area to the South.

The usual cropping system of farms in the Northern Lake Region consists of corn, small grains, and hay. The larger farms grow more corn and small grains while the smaller farms have a greater proportion of hay. The change is gradual from the larger to the smaller farms. A reduction in the portion of the cropland used for corn from 37 percent for Economic Class I farms to 20 percent for Class VI farms is accompanied by a smaller change in the total acreage of small grains and an increase in the hay acreage from 32 to 53 percent of the harvested cropland.

The small farms average 6 to 7 cows per farm in the different economic subregions while there is a wide range in the number of cows per herd on the larger farms. Economic Subregion 88 has 16 milk cows per farm on Economic Class I farms; Economic Subregion 65 has an average of 75 cows.

The different proportions of various crops are also geographic to a considerable extent. The southeastern part of the area has a heavy concentration of canning crops. Wisconsin has a greater acreage devoted to canning crops than any other State. These crops are grown as secondary enterprises on dairy farms. Each farmer produces only a few acres of canning peas or sweet corn and this reduces small grain or corn acreages to a like extent. Potatoes are grown in the eastern part of Subregion 67. A much larger acreage was grown earlier when the light soils were newly broken and before the organic matter was reduced. Much of this acreage is now in a rotation with feed grains and hay but an increasing number of farms grow potatoes as the important or only crop. Overhead irrigation from local subsurface sources supplies most water for the irrigation of potatoes, although a few of the operators pump directly from small streams. A large percentage of barley used for brewing is raised in the eastern part of the area, centering around the three important bodies of water—Lake Winnebago, the Four Lakes, and the Horicon Marsh. Practically all the rye grown in the area is found on the light soil of Economic Subregion 67.

Here, as in other dairy areas, the farm depends upon the farm family for most of its labor force, and since from three-fifths to four-fifths of all farm work is chore labor—and most of this with the dairy herd—the number of milk cows may well determine the labor used. The amount of family labor available for farm work remains fairly constant both among subregions and within economic classes.

So far as the age of dairy-farm operators is concerned, this area differs slightly from the three major dairy areas to the east. It has 3 percentage points, 20 percent, more operators under 35 years old and around 7 percentage points, 20 percent, fewer operators over 55 years. This means that a few more young men are taking up dairying than in the areas to the east and more of the older men are dropping out. One interpretation of this situation is that dairy farming in the Northern Lake Region offers a somewhat better opportunity for young men when expressed in terms of local alternatives than is true in other major dairy regions.

The modest incomes received by most dairymen in this region is shown by the average total farm income as well as by the income minus specified expenses.

Fifty-eight percent of these dairy farmers have less than $5,000 total income per farm and 20 percent have less than $2,500 (Table 24). The smallest average income among them is in Economic Subregion 88 where average total value of sales is $3,533, or only 57 percent of the income received by dairy farmers of Economic Subregion 65. The net income of $2,342 is more than half the average net income of Subregion 65, and, if total rather than specified expenses were subtracted from the total income, the net would be about half the present figure. The problem of buying capital items, meeting living expenses, and laying anything aside for emergencies, is burdensome indeed for operators with such small incomes. This again is a real problem with the farmers in Economic Classes IV, V, and VI. The size tabulation emphasizes the importance of volume of business if incomes are to be increased.

Table 24.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Northern Lake Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	124,501	425	10,548	41,266	46,789	20,843	4,630
Gross sales—							
Per farm dollars	5,279	34,271	13,002	6,918	3,764	1,924	851
Per crop acre do	58	95	78	63	48	35	21
Percent of gross sales from dairy products	67	65	63	67	71	72	72
Sales per farm:							
Milk dollars	3,563	22,428	8,184	4,647	2,654	1,387	613
Cattle and calves do	553	3,733	1,267	696	417	244	115
Hogs do	480	3,750	1,731	665	232	74	21
Poultry products except eggs dollars	39	102	96	51	28	15	6
Eggs do	249	566	478	344	197	98	41
Sheep do	11	93	24	13	8	5	4
Other livestock and livestock products dollars	7	41	14	12	8	6	5
Total, livestock and livestock products dollars	4,902	30,713	11,794	6,428	3,544	1,829	805
Field crops do	307	3,053	1,008	401	174	71	33
Other crops [1] do	70	505	200	89	46	24	13
Total crops do	377	3,558	1,208	490	220	95	46

[1] Includes horticultural and forest products.

Specified expenses per farm are less than for any region previously described (Table 25). Feed purchases represent around two-fifths of the specified expenses for each subregion; the quantity bought varies from $6 per acre of total cropland in Economic Subregion 88 to $11 in Economic Subregion 65. Feed expenses are less than for any other economic subregion of the dairy belt except the Northern Woods Region which bought only one-fourth as much feed as dairymen of the Northern Lake Region. The size of farms, the types of crops grown, and the degree of mechanization are comparable among the economic subregions so that such items as machine hire, gas and oil for farm work, and hired labor do not vary much.

Table 25.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Northern Lake Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	124,501	425	10,548	41,266	46,789	20,843	4,630
Average per farm:							
Machine hire dollars	144	220	201	167	139	100	53
Hired labor do	228	4,731	837	270	109	56	19
Feed do	881	5,012	2,021	1,149	645	372	186
Gas and oil do	360	1,574	715	447	298	182	99
Fertilizer do	135	1,171	412	175	84	35	16
Lime do	18	95	45	23	12	6	3
Total do	1,766	12,803	4,231	2,231	1,287	751	376
Average per crop acre:							
Machine hire do	2	1	1	2	2	2	1
Hired labor do	2	13	5	2	1	1	(Z)
Feed do	10	14	12	11	8	7	5
Gas and oil do	4	4	4	4	4	3	2
Fertilizer do	1	3	2	2	1	1	(Z)
Lime do	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Total do	19	35	24	21	16	14	8

Z Less than 0.50.

The net farm income and other measures of efficiency in the utilization of resources in this region continue to emphasize the influence of size (Table 26). The small farms unconsciously use all resources including labor in a prodigal manner. This probably can be remedied only by increasing the volume of business, because it is ordinarily not possible economically to reduce the available family labor or the capital invested in the farm. Production of crop and pastureland as well as of livestock can be increased, however, by some slight expansion in the capital used in the purchase and correct use of fertilizers, but more readily by improved methods of production which may not require more capital but will require an intense application of best cultural and management practices to land, crops, and livestock.

Table 26.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the Northern Lake Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	124,501	425	10,548	41,266	46,789	20,843	4,630
Gross sales per farm dollars	5,279	34,271	13,002	6,918	3,764	1,924	851
Specified expenses per farm do	1,766	12,803	4,231	2,231	1,287	751	376
Gross sales less specified expenses per farm dollars	3,513	21,468	8,771	4,687	2,477	1,173	475
Gross sales per man-equivalent	3,785	7,616	6,616	4,324	2,689	1,749	851
Total investment—							
Per farm dollars	24,169	106,500	48,308	29,208	19,754	13,414	9,594
Per man-equivalent do	17,264	23,667	24,154	18,255	14,110	12,195	9,594
Per $100 gross sales do	456	310	372	423	520	706	1,066
Percent of sales of dairy products from cream	3	1	1	2	4	8	16
Milk sales per cow:							
Dollars	201	323	261	213	174	138	97
Pounds (milk equivalent)	6,594	9,772	8,242	6,987	5,857	4,814	3,445

It is not easy to tell from available information just what are the reasons for the very low income. It is not known whether the operators of smaller farms patronized condenseries and cheese factories while the larger farms sold to the higher-paying fluid milk markets. Larger farms are better able to comply with the regulations placed on sellers of fluid milk. They are also better able to send to market a fairly constant supply of milk throughout the year, whereas the sales of the smaller operators may be quite variable.

One pertinent situation does show up in these records: the lower the income the larger is the proportion of cream sold. The whole area averaged $6 per cow from this source, or 3 percent of the total income from the sale of both milk and cream.

The highest cream sales were in Economic Subregion 88, where they constituted 20 percent of the total sales of dairy products. Economic Subregion 68 received only 4 percent of its dairy income from cream; the two other subregions sold only token quantities. Economic Subregion 88 received $2.77 per 100 pounds milk equivalent for all milk sold, compared with $3.09 for the eastern part of the area.

A somewhat wider price differential is shown for farms grouped by economic class. The average milk price for Economic Class VI was $2.81 per 100 pounds and 16 percent of this was from the sale of cream. The average price increased and the percentage of cream sales decreased with the economic class, until Economic Class I showed almost no cream sales and an average milk price of $3.31 per 100 pounds.

If the smaller farms were to use as much fertilizer per acre as their largest neighbors they would have to buy 50 to 75 percent more than they did in 1954 (Table 27). The per acre rate of application was practically the same for all farms although the larger farms paid a little more per ton which suggests the use of fertilizers with higher nutrient content.

Table 27.—Use of Fertilizer and Lime on Dairy Farms, By Economic Class of Farm, for the Northern Lake Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	124,501	425	10,548	41,266	46,789	20,843	4,630
Fertilizer:							
Percent of farms using	66	99	91	79	63	42	23
Tons used per farm reporting	3	19	7	4	2	1	1
Acres upon which used per farm reporting	34	175	70	37	22	15	12
Average per acre fertilized:							
Pounds	200	213	201	197	198	202	207
Cost dollars	6.05	6.80	6.45	5.90	5.89	5.78	5.90
Lime:							
Percent of farms using	23	38	39	30	20	12	6
Acres upon which used per farm reporting	14	52	22	14	11	9	11
Average per acre limed:							
Pounds	3,649	4,153	3,934	3,631	3,468	3,396	2,643
Cost dollars	5.53	4.83	5.33	5.52	5.82	5.64	4.00

One-fourth to one-third more farmers used fertilizer or lime in the eastern part of the area than in the western part. Of the farmers in Economic Subregion 67 fertilizer was used by 76 percent; only 48 percent in Economic Subregion 88 used it. This latter subregion also applied fertilizer to fewer acres although the rate of application was approximately the same for all subregions.

Farms vary more among the subregions in the intensity of operation, or in the relation of feed produced to livestock numbers, than in the proportion of the several classes of livestock maintained on individual farms. The number of milk cows, along with the young stock raised for replacement, constitute by far the largest proportion of livestock. The presence or absence of a few more hogs or sheep or even a few hundred head of poultry scarcely changes the capital and labor requirements on the usual dairy farm, yet these minor enterprises contribute materially to income.

Economic Subregion 67, which has the least productive soils also has the least livestock per farm. Because of poor yields of crops it buys more feed than the other subregions. On the other hand, Economic Subregion 65 has the most intensively operated farms with the greatest gross income per acre.

EASTERN OHIO-WESTERN PENNSYLVANIA REGION
(Economic Subregions 17, 27, 28, 29, 30)

The story of the settlement and development of this region which consists of the western two-thirds of Pennsylvania and the eastern half of Ohio, along with a little of West Virginia and one small Kentucky county, is similar to that of the Northeastern Dairy Region except that it has not gone so strongly into dairying. The shift from a self-sufficing home economy to a highly specialized and commercialized production was gradual and practically continuous until a generation ago. During the last 30 years, however, the change in production practices and output have been almost revolutionary. The use of improved seed, better cultural practices, more selective breeding programs, and a more realistic interpretation of market needs, has resulted in a greatly enhanced output per man and higher living standards for the farm families.

EASTERN OHIO-WESTERN PENNSYLVANIA DAIRY AREA

Figure 14.

There are more livestock farms other than dairy and poultry in Economic Subregions 29 and 30 than in other subregions of the region. Economic Subregion 28 has a good distribution of field crops, other livestock and general farms; and Economic Subregion 17 replaces other livestock farms with poultry farms.

The region has a varied soil and topographic pattern. Soils of Northwestern Pennsylvania are derived from sandstones and are less fertile than the ridge and valley country in the rougher parts of the State. The hilly land in the central part of the plateau gives way to a rolling to fairly level topography along the Ohio border. This type of topography continues into Northern Ohio where soils are generally productive. Southeastern Ohio and the bordering land of West Virginia is nonglaciated, of limestone origin and has a rolling to rough topography.

The cropping system is fairly well described as a 3-year rotation of corn, small grains, and hay. Cash crops, mostly field crops, account for around one-tenth of the sale of farm products from these dairy farms. Some feed is shipped out to the Northeastern Dairy Region although the dairy farms within this area have little, if any, surplus feed. It is farmed less intensively as shown by fewer milk cows per crop acre and less is spent for specified expenses. The production of dairy products seems to have developed in Northeastern Ohio when it was still a part of the Western Reserve of Connecticut. The Connecticut Yankees brought in cheesemaking over a century ago and it has consistently been considered a dairy section since then. It, too, went through the stage of homemade to factory manufacture of cheese and butter.

Dairy farming is only one of several, though the most important, farming enterprises of the region. There are more other livestock farms in Economic Subregions 29 and 30 than in other of the subregions while Economic Subregion 28 has a good distribution of field crops, other livestock, and general farms; Economic Subregion 17 replaces other livestock farms with poultry farms.

The dairy farms are considerably more diversified than is true in the Northeastern Region. They have only 71 percent of the total income from milk in comparison with 86 percent in the Northeast (Table 28). This diversification includes both livestock and crops. Sales of pigs, poultry, and eggs are relatively important in every economic subregion, accounting for 7 to 11 percent of the total income. Crop sales, on the other hand, show a greater range than do the sales of livestock. Economic Subregion 30 derives 8 percent of the total income of its dairy farms from the sale of field and cash crops. Economic Subregion 17 gets 14 percent from these sources.

Table 28.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Eastern Ohio-Western Pennsylvania Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	40,636	258	4,432	12,439	12,911	7,055	3,541
Gross sales—							
Per farm dollars	5,389	30,716	13,458	6,990	3,760	1,883	751
Per crop acre do	69	120	92	74	58	38	23
Percent of gross sales from dairy products	71	76	70	71	72	67	62
Sales per farm:							
Milk dollars	3,810	23,219	9,378	4,946	2,725	1,264	463
Cattle and calves do	435	2,521	968	515	321	240	140
Hogs do	184	1,082	507	249	102	64	25
Poultry products except eggs dollars	71	152	249	88	41	18	9
Eggs do	252	608	640	350	160	92	47
Sheep do	18	45	23	22	15	15	8
Other livestock and livestock products dollars	15	43	25	18	14	14	6
Total, livestock and livestock products dollars	4,785	27,670	11,781	6,188	3,378	1,707	698
Field crops do	547	2,568	1,522	735	346	154	37
Other crops[1] do	57	478	155	67	36	22	16
Total crops do	604	3,046	1,677	802	382	176	53

[1] Includes horticultural and forest products.

Specified expenses of the dairy farms are two-thirds those of the Northeastern Dairy Region while the income is three-fourths as much (Table 29). Expenses were slightly less than one-half the total value of sales in comparison with slightly more than one-half for the Northeastern Region. Milk sales per cow were less but not so much was spent for feed. There was a wide range within the region both in specified expenses and in feed bought. Economic Subregion 30, with specified expenses of $1,668 per farm was the lowest, and $68 feed cost per cow was the second lowest of the area. At the other extreme was Economic Subregion 17 with $3,021 expenses per farm and $98 feed bought per cow. Economy in the use of resources may reduce efficiency.

Table 29.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Eastern Ohio-Western Pennsylvania Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	40,636	258	4,432	12,439	12,911	7,055	3,541
Average per farm:							
Machine hire dollars	139	148	205	175	135	93	37
Hired labor do	370	4,948	1,382	395	161	73	30
Feed do	1,241	5,016	2,891	1,586	926	545	224
Gas and oil do	340	1,391	714	431	279	160	63
Fertilizer do	287	1,477	702	362	203	122	49
Lime do	77	256	171	100	58	35	16
Total do	2,454	13,236	6,065	3,049	1,762	1,028	419
Average per crop acre:							
Machine hire do	2	1	1	2	2	2	1
Hired labor do	5	19	9	4	2	2	1
Feed do	16	20	20	17	14	11	7
Gas and oil do	4	5	5	5	4	3	2
Fertilizer do	4	6	5	4	3	3	2
Lime do	1	1	1	1	1	1	(Z)
Total do	32	52	41	33	26	22	13

Z Less than 0.50.

Sorting by size discloses the smaller farms to be slightly more diversified than the larger (Table 30). They have less income per farm and per crop acre. Dairy-product sales per cow, both in dollars and pounds, are so low in Economic Class VI as to raise the question of whether the operators of these farms are seriously engaged in dairying. Sales of $82 per cow in comparison with $123 for Economic Class I is an extreme range. Approximately one-third of the small quantity of cream sold from the area is from the group of smallest farms and more than one-fourth of the total milk sales from these farms is in this form. The sale of cream may help to account for the low money income per cow but it will not account for the low milk production unless butterfat prices are so low as to discourage proper management.

Table 30.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the Eastern Ohio-Western Pennsylvania Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	40,636	258	4,432	12,439	12,911	7,055	3,541
Gross sales per farm dollars	5,389	30,716	13,458	6,990	3,760	1,883	751
Specified expenses per farm do	2,454	13,236	6,065	3,049	1,762	1,028	419
Gross sales less specified expenses per farm dollars	2,935	17,480	7,393	3,941	1,998	855	332
Gross sales per man-equivalent	3,849	6,981	6,117	4,660	2,892	1,883	751
Total investment—							
Per farm dollars	23,137	80,978	46,358	27,723	19,143	13,764	8,508
Per man-equivalent do	16,526	18,404	21,072	18,482	14,725	13,764	8,508
Per $100 gross sales do	428	264	343	396	504	724	1,064
Percent of sales of dairy products from cream	1	1	(Z)	(Z)	1	3	28
Milk sales per cow:							
Dollars	251	423	328	269	213	143	82
Pounds (milk equivalent)	6,298	9,110	7,718	6,696	5,593	4,200	3,082

Z Less than 0.5.

A larger percentage of these farmers are using both lime and fertilizer than in the Northeastern Area (Table 31). Farmers of Economic Class I used 400 pounds of fertilizer per acre; those of the other economic classes used 40 to 100 pounds less per acre of land treated, and on a smaller acreage. Information is not available to show what kind or how much fertilizer should be used. It is probable that the small farms need fertilizer as much as the larger ones do, yet only two-thirds as many reported buying any.

Table 31.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for the Eastern Ohio-Western Pennsylvania Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	40,636	258	4,432	12,439	12,911	7,055	3,541
Fertilizer:							
Percent of farms using	90	98	98	96	93	82	60
Tons used per farm reporting	6	38	14	7	4	3	2
Acres upon which used per farm reporting	39	156	80	47	28	19	11
Average per acre fertilized:							
Pounds	320	391	343	313	305	308	317
Cost dollars	8.23	9.67	8.98	8.04	7.71	8.02	7.56
Lime:							
Percent of farms using	54	69	71	63	53	41	25
Acres upon which used per farm reporting	16	47	26	16	12	10	10
Average per acre limed:							
Pounds	3,456	3,180	3,568	3,495	3,487	3,132	2,856
Cost dollars	8.91	7.86	9.32	9.06	8.83	8.29	6.78

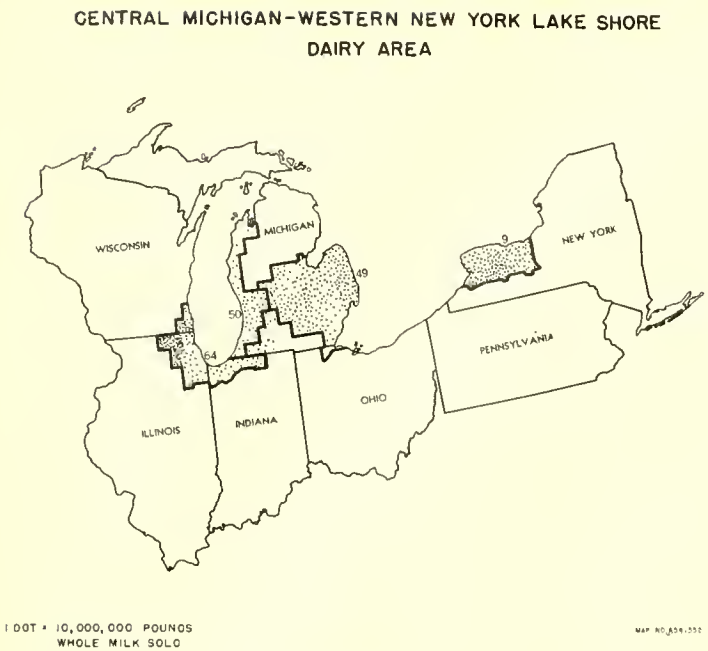

Figure 15.

CENTRAL MICHIGAN-WESTERN NEW YORK LAKE SHORE REGION

(Economic Subregions 9, 49, 50, 64)

In this region the soils have a wide range of texture and structure as well as a mixed topography. The part that borders on Lake Huron has soils that were developed under poor natural drainage conditions from heavily timbered, swampy, loam or clay-loam parent material. They are fairly high in organic matter, lime, and nitrogen. These with their moisture-retaining capacities make for productive and durable soils. Some of the more nearly level stretches are also productive when provided with adequate drainage. Small grains and hay do well here and the heaviest concentration of corn in the State is in the counties just north of the Ohio border. The few sugarbeets grown in the State are in this area as is the heaviest concentration of potatoes. Michigan leads in growing field beans and virtually the whole acreage is grown on the dark colored, well-drained, heavy loam soils at the north side of the "Thumb."

The soils of the central part are derived mainly from glacial till and are usually high in fertility. They stand cultivation where the land is not on the steeper slopes. Such staple crops as corn, oats, and hay do well. Mint, onions, and other truck crops are grown on the more nearly level muck soils.

The western part of the Michigan country has a diverse soil and topographic pattern. The most commonly found soils are excessively drained sands, strongly acid, and low in organic matter. Islands of less porous soil dot this part. They may be classed as loamy sands and sandy loams and occupy level to rolling locations. When well handled these soils produce fair yields of oats and hay, and potato crops are good. Cherry orchards have been developed on the hillier and sandier soils of the Lake Michigan shore where, because of the proximity of that large body of water, the climate is moderated.

Although there are more dairy farms than any other single type in the four economic subregions there is a mixture with other livestock and cash crops and some limited localities within the area are dominated by types other than dairy. The southwestern corner of Michigan is known for its fruit and truck growing. Berries, tomatoes, asparagus, and muskmelons are predominant specialty crops. Apples, peaches, and pears do well. A little farther east away from the lake shore, sales of hogs and cattle supplement the sale of dairy products, and a little farther north along the lake shore, poultry and truck crops are valued sources of income. Fruit trees and grape vines extend north of the poultry-truck-crop section in Economic Subregion 50. The three northern counties of this subregion have very few milk cows.

The metropolitan area in the southeastern part of Economic Subregion 49 offers the best market in the State for dairy and truck crops and furnishes the most part-time employment. Fluid milk, poultry, eggs, vegetables, and small fruits are produced for local market. The Chicagoland market for farm products raised in Economic Subregion 64 is as good or better than that afforded the products of Economic Subregion 49. The important sources of farm income for this lake shore subregion are field crops, fresh vegetables, and poultry, as well as dairying.

This economic subregion, and Michigan Economic Area 3, are ordinarily not considered a part of the central Michigan dairy country because of a possibly closer relationship to the Northern Lake Dairy Area and because of a dearth of milk cows. Because only the dairy farms of the area, and not all types of farms, are being considered in this connection and because the basic organization of dairy farms changes little from area to area, it was thought desirable to include these two sections with the rest of this region.

Economic Subregion 9 on the lake shore of western New York was placed in this general area because of the similarity of types of production. This shore is devoted essentially to fruit and vegetable growing. It is the largest fruit and vegetable locality within the State of New York. Both the dairy and the fruit enterprises have been increasing in this subregion during the last 25 years, whereas vegetable and cereal growing have been decreasing. Fruit growing is concentrated on the fertile deep soils which are near enough to Lake Erie to be benefited by the moderating influence of its water. Grapes are grown on the fringes of the locality. The whole subregion grows a wide range of crops and livestock products. Some localities are so specialized as to justify special consideration in any presentation covering these commodities.

The dairy farms of the Central Michigan-Western New York Lake Shore Region have an average total income of $7,000 per farm which is only $200 less than that of the Northeastern Dairy Region but nearly $2,000 more than that of the Eastern Ohio-Western Pennsylvania Region. The farms are more diversified, have a greater acreage of harvested crops, and have higher land values than either of these other regions. Total income for the subregions within the area is lowest for the dairy farms along the eastern shore of Lake Michigan, Economic Subregion 50, and highest for the Western New York Lake Shore, and Economic Subregion 9. The range is practically 100 percent—from $4,592 to $9,135.

The degree of specialization varies inversely with average income. Economic Subregions 9 and 64 have the largest average income and least diversification, while Economic Subregions 49 and 50 with smaller incomes have the greatest diversification. The two areas with the largest incomes not only are less diversified but they have an average of 94 and 104 acres of harvested cropland and 23 and 24 milk cows, respectively, as compared to 84 and 67 acres of harvested crops and 15 and 13 cows per farm for the subregions with smaller incomes. Diversification in the two Michigan subregions is probably the result of local environmental conditions and personal considerations rather than its favorable effect on income.

The income range of the different economic subregions follows the pattern of the region (Table 32). The total sales as well as the sales per acre of total cropland show a consistent drop from the large to the small farms. What diversification there is shows up more among economic subregions than within the subregions. The smaller farms within a subregion show little, if any, more diversification than the larger farms.

Specified expenses of the region are consistently less than of either of the previously discussed regions when expressed in terms of income. The ratio of expenses to income in Economic Subregions 49 and 64 is 1 to 3; in Subregions 9 and 50 the ratios are 1 to 2.3 and 1 to 2.6, respectively.

Table 32.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Central Michigan–Western New York Lake Shore Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	35,605	551	6,925	12,068	9,286	5,175	1,600
Gross sales—							
Per farm—dollars	7,011	34,652	14,085	7,168	3,800	1,909	836
Per crop acre—do	62	101	76	60	45	32	19
Percent of gross sales from dairy products	66	65	66	67	67	64	64
Sales per farm:							
Milk—dollars	4,650	22,438	9,317	4,805	2,535	1,220	538
Cattle and calves—do	582	3,254	1,057	567	362	234	117
Hogs—do	229	1,343	550	207	84	54	29
Poultry products except eggs—do	52	147	93	57	32	20	9
Eggs—do	202	447	333	241	140	75	33
Sheep—do	18	181	29	20	9	4	2
Other livestock and livestock products—dollars	9	40	14	9	6	3	3
Total, livestock and livestock products—dollars	5,742	27,850	11,393	5,906	3,168	1,610	731
Field crops—do	1,162	5,919	2,496	1,170	565	260	70
Other crops [1]—do	107	883	196	92	67	39	35
Total crops—do	1,269	6,802	2,692	1,262	632	299	105

[1] Includes horticultural and forest products.

Table 33.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Central Michigan-Western New York Lake Shore Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	35,605	551	6,925	12,068	9,286	5,175	1,600
Average per farm:							
Machine hire—dollars	176	252	224	199	162	110	52
Hired labor—do	468	5,799	1,124	347	125	56	16
Feed—do	1,062	4,823	1,982	1,101	633	375	204
Gas and oil—do	439	1,626	768	464	287	195	101
Fertilizer—do	347	1,492	689	357	192	110	64
Lime—do	25	160	54	24	12	7	2
Total—do	2,517	14,152	4,841	2,492	1,411	853	439
Average per crop acre:							
Machine hire—do	2	1	1	2	2	2	1
Hired labor—do	4	17	6	3	1	1	(Z)
Feed—do	9	14	11	9	8	7	5
Gas and oil—do	4	5	4	4	3	3	2
Fertilizer—do	3	4	4	3	2	2	1
Lime—do	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Total—do	22	41	26	21	16	15	9

Z Less than 0.50.

Feed bought is again the largest single item of specified expenses (Table 33). It amounts to $76 per cow for Economic Subregion 9 and about $60 per cow for Economic Subregions 64 and 50. In Western New York, Economic Subregion 9 is outstandingly high on this item as are all the farms in the Northeastern Dairy Region.

Net farm income and other items showing the relation of various factors to the success of the venture disclose little change from the standard pattern set by the previously described areas (Table 34). The operators of small farms show less effective use of all resources, whether they be physical or human, than the larger farmers.

Table 34.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the Central Michigan-Western New York Lake Shore Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	35,605	551	6,925	12,068	9,286	5,175	1,600
Gross sales per farm—dollars	7,011	34,652	14,085	7,168	3,800	1,909	836
Specified expenses per farm—do	2,517	14,152	4,841	2,492	1,411	853	439
Gross sales less specified expenses per farm—dollars	4,494	20,500	9,244	4,676	2,389	1,056	397
Gross sales per man-equivalent	5,393	8,250	7,825	5,120	3,455	2,121	929
Total investment—							
Per farm—dollars	32,792	113,217	55,999	33,703	22,274	16,031	11,400
Per man-equivalent—do	25,225	26,956	31,111	24,074	20,249	17,812	12,667
Per $100 gross sales—do	468	326	397	468	586	844	1,425
Percent of sales of dairy products from cream	1	(Z)	(Z)	(Z)	2	8	30
Milk sales per cow:							
Dollars	259	383	302	256	205	147	98
Pounds (milk equivalent)	7,261	9,358	8,143	7,294	6,090	4,973	3,750

Z Less than 0.5 percent.

Nine-tenths of the dairy farms of this region used some fertilizer (Table 35). The quantity applied per acre was only 240 pounds in comparison with around 400 pounds for the two more eastern dairy regions. The two subregions with the larger farms bought the larger quantities but only the New York subregion applied more per acre fertilized. Farmers in this subregion, on the average, applied 100 pounds more per acre than Subregion 64, and 120 pounds more than was applied by the other subregions.

Table 35.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for the Central Michigan-Western New York Lake Shore Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	35,605	551	6,925	12,068	9,286	5,175	1,600
Fertilizer:							
Percent of farms using	90	99	97	95	90	77	55
Tons used per farm reporting	7	29	13	7	4	3	2
Acres upon which used per farm reporting	56	179	96	57	35	22	16
Average per acre fertilized:							
Pounds	251	328	261	241	228	232	264
Cost—dollars	6.89	8.39	7.36	6.58	6.13	6.41	7.41
Lime:							
Percent of farms using	20	47	31	23	14	10	3
Acres upon which used per farm reporting	18	42	25	15	12	10	6
Average per acre limed:							
Pounds	3,271	3,526	2,904	3,450	3,690	3,894	3,937
Cost—dollars	7.13	7.96	6.82	7.27	7.30	6.97	9.67

Figure 16.

THE NORTHERN WOODS REGION
(Economic Subregion 66)

The whole Northern Woods Region, usually called the cut-over lands, has less agricultural development than any of the other dairy areas. Its varied and irregular topography, short cool growing seasons, and long cold winters call for hardy individuals as farmers. On most of the farms they must be willing to face many handicaps to agricultural production if they are to extract a living. Occasional openings of tillable land are found where one or more large farms have been established. Their operators are able to make good incomes and have fairly satisfactory living conditions. Most of the land has broken irregular terrain and a mixture of fairly heavy to light soils containing divers impediments to tillage such as boulders, stones, pot holes, knolls, and marshy spots. Such acreage must depend for its development on people who are willing to try to cultivate these rather isolated pieces of land.

The agricultural history of this region began after the removal of the forests, when land companies and other owners of large tracts offered various inducements to obtain settlers. Many settlers came and were sold small tracts of cleared or partially cleared land. One or more generations of families toiled and grubbed to expand cleared acres so as to grow enough for family needs.

After the initial influx of buyers the number of farms continued to increase until 1940. At that time, there were 91,740 farms in the region (Table 36). Since then, the number of farms decreased to 57,917 in 1954. The size of farms, on the other hand, has been increasing. The average farm now contains 186 acres with 57 acres of harvested crops and total cropland of 77 acres. Along with the decrease of 37 percent in the number of farms was a decrease in numbers of milk cows from 486,371 to 415,518 in 1950, but this was followed by an increase during the next 4 years to 438,582. The net decrease in milk-cow numbers during the 14-year period was 10 percent. The herds became larger, however, showing an increase from 5.3 cows in 1940 per farm to 7.6 in 1954.

Even with these changes there are still very few large farms in the area and very many small farms. At present, fewer than 2 percent of all dairy farms are in Economic Classes I and II, and they have only 4 percent of the milk cows of the area. At the other extreme, in Economic Classes V and VI, are more than one-half the dairy farms and they have more than one-third of all the milk cows.

Hay and pastureland dominate the region. From one-half to nine-tenths of the tillable land in the different counties is used for this purpose. Growing seasons are too short and cool for corn to mature, except in the southernmost parts, so most of it is grown for silage or forage. Cereal crops like oats do well and some root crops are grown. A second growth of trees has started on land that was not kept cleared.

Table 36.—Number of Farms and Number of Milk Cows in the Northern Woods Region: 1930 to 1954

Year	Number of farms	Number of milk cows	Average number of cows per farm
1930	77,663	373,294	4.8
1940	91,740	486,371	5.3
1950	70,412	415,518	5.9
1954	57,917	438,582	7.6

The organization of the dairy farms follows the pattern in the Northern Lake Region. Whether the farms be large or small the basic cropping system consists of corn, small grains, and hay. The proportion of the different crops changes somewhat with the size of farm. The smaller farms grow relatively less corn and small grains and more hay than the larger farms. The crops grown suggest a 6-year rotation for the largest farms and a 7- or 8-year rotation for the smallest. There are 4 to 5 acres of harvested cropland per cow with no evident relation to size of farm. The same holds true for acres harvested and total animal units. The largest farms, Economic Class I, have 2.4 acres of harvested cropland per animal unit. The others average approximately 3 acres regardless of size.

The range in the amount of business done by the different economic classes of farms, like those of other areas, is so great as to be almost startling (Table 37). Why should the largest farms have livestock and crop sales of $122 per acre of total cropland, while the small farms average $19? And why should specified expenses range from $42 to $7 per acre (Table 38)? A partial answer has to do with the way in which resources are used. But why such a range in the use of resources when from two-thirds to three-fourths of the value of sales is from milk and equal opportunity is offered both small and large farmers to improve the dairy herd through a breeding program, as well as to obtain and learn to use most effectively a good quality of hay?

Table 37.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Northern Woods Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	28,001	32	385	3,294	9,465	10,820	4,005
Gross sales—							
Per farm...dollars	2,999	36,118	12,495	6,545	3,499	1,849	831
Per crop acre...do	39	122	64	53	42	29	19
Percent of gross sales from dairy products	73	62	68	75	74	72	69
Sales per farm:							
Milk...dollars	2,193	22,247	8,482	4,877	2,605	1,332	575
Cattle and calves...do	381	5,914	1,353	760	416	274	141
Hogs...do	62	32	286	156	71	36	12
Poultry products except eggs...do	16	56	142	25	19	10	5
Eggs...do	66	395	256	139	76	42	23
Sheep...do	13	228	65	22	15	9	3
Other livestock and livestock products...dollars	8	76	29	13	7	8	4
Total, livestock and livestock products...dollars	2,739	28,948	10,613	5,992	3,209	1,711	763
Field crops...do	165	7,017	1,408	371	170	80	40
Other crops[1]...do	95	152	474	182	120	58	27
Total crops...do	260	7,169	1,882	553	290	138	67

[1] Includes horticultural and forest products.

Table 38.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Northern Woods Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	28,001	32	385	3,294	9,465	10,820	4,005
Average per farm:							
Machine hire...dollars	89	178	129	134	109	74	43
Hired labor...do	113	4,402	1,252	318	96	46	21
Feed...do	461	4,622	1,708	947	533	303	162
Gas and oil...do	242	1,449	748	443	276	184	96
Fertilizer...do	78	1,061	511	206	88	34	15
Lime...do	13	336	62	31	15	6	2
Total...do	996	12,048	4,410	2,079	1,117	647	339
Average per crop acre:							
Machine hire...do	1	1	1	1	1	1	1
Hired labor...do	1	15	6	3	1	1	(Z)
Feed...do	6	16	9	8	6	5	4
Gas and oil...do	3	5	4	4	3	3	2
Fertilizer...do	1	4	3	2	1	1	(Z)
Lime...do	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Total...do	12	42	23	18	12	11	7

Z Less than 0.50.

Milk sales per cow show the same trend (Table 39). They dropped from $446 to $94 and from 13,282 pounds to 3,718 pounds. The lower price of cream can account for a part of the price difference because the smaller farmers sold more than 40 percent of their milk as cream whereas the larger farms sold not more than 5 or 6 percent.

Average net farm incomes of these operators were a little more than one-half of those of the Northern Lake Region not because of the differences between identical economic classes, but because of the much larger proportion of farmers in Economic Classes V and VI. Likewise, other factors showing effectiveness in the use of resources are fairly comparable with other areas within economic classes, but averages for the whole region are low. Fully one-half of the dairy farms are in the two smallest size groups in comparison with one-fifth for the Northern Lake Region.

Table 39.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the Northern Woods Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	28,001	32	385	3,294	9,465	10,820	4,005
Gross sales per farm...dollars	2,999	36,118	12,495	6,545	3,499	1,849	831
Specified expenses per farm...do	996	12,048	4,410	2,079	1,117	647	339
Gross sales less specified expenses per farm...dollars	2,003	24,070	8,085	4,466	2,382	1,202	492
Gross sales per man-equivalent	2,307	8,209	5,433	4,091	2,499	1,541	755
Total investment—							
Per farm...dollars	15,388	60,537	37,618	25,954	16,944	12,465	8,608
Per man-equivalent...do	11,837	13,758	16,356	16,221	12,103	10,388	7,825
Per $100 gross sales...do	513	168	301	399	484	692	1,076
Percent of sales of dairy products from cream	14	(Z)	6	5	12	25	44
Milk sales per cow:							
Dollars	174	446	293	230	179	135	94
Pounds (milk equivalent)	5,674	13,282	8,327	6,796	5,794	4,842	3,718

Z Less than 0.5 percent.

Not so many of these farmers used fertilizers as in other areas, and when used the rates applied were lower (Table 40). Fewer of the smaller farmers bought fertilizers and they applied less per acre than their larger neighbors. The soils were derived from noncalcareous material so that in general a good application of limestone or marl is beneficial to crop production. Yet only one-seventh of these farmers reported using any liming material, and only a few of the smaller farms used any at all. When used, these smaller farmers made only about half the per acre application made by the larger farms. The limited use of both fertilizers and lime may partly account for the relatively low production reported for the area as a whole.

Table 40.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for The Northern Woods Region: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	28,001	32	385	3,294	9,465	10,820	4,005
Fertilizer:							
Percent of farms using	48	84	84	79	62	35	21
Tons used per farm reporting	3	20	10	4	2	2	1
Acres upon which used per farm reporting	23	138	75	35	21	15	11
Average per acre fertilized:							
Pounds	240	290	269	246	236	231	216
Cost...dollars	7.08	9.12	8.16	7.32	6.89	6.62	6.45
Lime:							
Percent of farms using	16	63	34	32	21	11	4
Acres upon which used per farm reporting	12	59	20	14	11	9	9
Average per acre limed:							
Pounds	3,690	6,270	4,362	3,603	3,639	3,502	3,343
Cost...dollars	6.84	9.07	9.12	6.85	6.84	6.21	5.40

SPECIAL DAIRY AREAS

We have seen that the more important dairy areas of the United States have developed from a background of physical conditions as well as economic forces and situations. This interplay of forces and conditions has resulted in areas that are fairly definitely delineated. Dairying has also developed well in some restricted areas, because of special market situations as well as natural forces.

Concentrations of population do not necessarily take place within areas of intensive food production. Rather the opposite is true, especially for certain food products of which the production of milk for fluid consumption is a conspicuous example. In the past, the perishability of milk restricted its production to locations that were relatively close to consuming centers. Even now, although improved methods of handling fluid milk have so increased its keeping qualities that it can be moved hundreds of miles and still arrive at the consuming centers in the best condition, this is not done in large volume for two reasons.

The first is the cost of transporting milk these longer distances. Milk must receive expedited service and this transportation is the highest in price. It is much cheaper per hundredweight to ship in the 20 or 25 pounds of grain and other concentrates usually required to produce 100 pounds of milk than it is to ship the 100 pounds of milk. In a few limited areas this margin is so wide that some dairymen prefer a location at the market. They buy all of their feed and spend full working time with the dairy herd.

A second reason is found in the regulations and restrictions set up by local health authorities whose primary function is to assure consumers the highest quality product. These regulations sometimes are greater deterrents to the shipment of fluid milk than are transportation and handling costs.

Because of varying economic forces and the administration of different health regulations these special dairy areas continue to develop and expand. Since each of the more outstanding special areas is different in some respects from every other, a brief discussion of each is in order.

GENERAL CHARACTERISTICS

There are eight smaller areas which have a large enough concentration of dairy farms or milk production to justify individual description. A considerable range in the proportion of dairy farms to all commercial farms is found in the different areas (Table 41).

The Ozark-Springfield area, Subregions 73 and 82, is more nearly like a major dairy-producing area than any of the others. Nearly one-half of the commercial farms are dairy farms and they fairly well blanket these two subregions. One-third of the commercial farms have beef cattle or hogs as the major enterprise and this makes it easier to add a few milk cows than when cash crops or poultry is the main source of income. The rolling topography with large acreages of pastureland encourages livestock farming.

Such areas as the Gulf Coastal, Subregion 58, the California Inner Valley, Subregion 116, and the Southern California area, Subregion 115, where half or more of the farms are classed as cash-crop farms will take up dairying more slowly than where livestock other than dairy predominates. Also, it costs more to change the cropping system and buildings, as well as the form of operating capital to suit dairy farming, than when the system already includes other livestock.

Another conspicuous difference among these subregions is the proportion of noncommercial farms. A noncommercial farm may be a part-time, residential, or abnormal farm, and the operator is not considered a genuine or full-time farm operator. It is frequently held that large numbers of noncommercial farms are found in areas having much industrial or commercial activity. Excess capital and energy in these areas find outlets in various farming ventures which give recreation and pleasure to the owners.

Table 41.—Number of Commercial Farms by Type, for Special Dairy Areas: 1954

Special dairy area	Subregions included	All farms (number)	Commercial farms		Percent distribution of commercial farms by type					
			Number	Percent of all farms	Cotton, cash-grain, other field-crop, fruit-and-nut, and vegetable	Dairy	Poultry	Other livestock	General	All other
Atlantic Coast	3, 4, 5, 11, 12, 13, 14, 16	103,812	75,417	73	18	35	23	8	10	5
Nashville Basin	54	29,528	19,437	66	29	34	1	21	14	1
Gulf Coastal	58	36,092	13,369	37	48	20	6	15	7	4
Ozark-Springfield	73 and 82	95,625	51,088	53	7	45	9	31	7	1
Snake River-Utah Valley	112	44,056	34,472	78	34	25	4	16	22	0
Southern California	115	34,537	23,847	69	55	5	23	7	5	5
California Inner Valley	116	52,447	42,223	80	56	21	7	9	7	0
Puget Sound-Coastal	118 and 119	82,169	40,189	49	26	31	13	13	10	7

These areas do not demonstrate this premise. The fewest noncommercial farms are in the Inner Valley of California, Subregion 116, where population is increasing, industries are growing, and evidences of prosperous communities are obvious. The same proportion of noncommercial farms is found in the Intermountain area, Subregion 112, where irrigation makes for high-value dairy farms, and where industrial development is limited to the cities of Boise, Salt Lake City, and Twin Falls. On the other hand, the largest numbers of noncommercial farms are found in the Puget Sound and the Gulf Coastal areas, where there is no more free capital looking for diversional or recreational outlets than in other areas

The dairy farms of these special areas vary greatly in the amount and proportion of the area resources used. Those of Southern California occupy less than 3 percent of both the total farmland and the cropland of the area. Yet they have 97 percent of the milk cows and account for 99 percent of the dairy income.

Near the other extreme are the dairy farms of the Snake River-Utah Valley area. Although 25 percent of the farms are dairy farms they occupy only 6 percent of the farmland and 10 percent of the cropland. They sell only 63 percent of the dairy products of the area. Dairy farms of the other special areas usually are found to be between these two extremes in the use of land and in the sale of dairy products.

It is logical to expect to find most of the milk cows in a dairy area on dairy farms. This is the situation in all the special areas. The Intermountain area, Subregion 112, is the only one where more than 40 percent of milk cows are on nondairy farms (Table 42). A large part of these are on general or other livestock farms, while the highly specialized poultry farms have the fewest milk cows.

Table 42.—Distribution of Milk Cows on Commercial Farms by Type of Farm, for Special Dairy Areas: 1954

Special dairy area	Subregions included	Total milk cows on all commercial farms	Percent of milk cows on—	
			Dairy farms	Other farms
Atlantic Coast	3, 4, 5, 11, 12, 13, 14, 16	760,066	86	14
Nashville Basin	54	158,588	62	38
Gulf Coastal	58	101,804	82	18
Ozark-Springfield	73	277,124	73	27
Ozark-Springfield	82	112,338	66	34
Total	73 and 82	389,462	71	29
Snake River-Utah Valley	112	237,194	52	48
Southern California	115	201,916	97	3
California Inner Valley	116	113,863	88	12
Puget Sound-Coastal	118	186,639	91	9
Puget Sound-Coastal	119	128,307	74	26
Total	118 and 119	314,946	84	16

VARIATIONS IN FARM CHARACTERISTICS

Figures from different studies indicate that well-organized dairy farms generally turn over their capital every 2½ to 3 years. The following tabulation shows some of these relationships for the special areas. The commercial nature of the dairy operators in Southern California is obvious in this comparison.

Area and subregion	Total investment per milk cow (dollars)	Percent of income from all sources except milk	Years for income to equal value of land and buildings	
			Total income	Income less specified expenses
Subregions 3, 4, 5, 11, 12, 13, 14, 16 (Atlantic Coast)	1,588	(NA)	(NA)	(NA)
Subregion 54 (Nashville Basin)	1,048	34	3.6	6.2
Subregion 58 (Gulf Coastal)	648	12	2.1	5.1
Subregions 73 and 82 (Ozark-Springfield)	1,040	30	3.2	7.3
Subregion 112 (Snake River-Utah Valley)	1,971	32	4.3	6.6
Subregion 115 (Southern California)	767	8	1.0	2.4
Subregion 116 (California Inner Valley)	1,382	18	3.1	5.6
Subregions 118 and 119 (Puget Sound-Coastal)	1,657	15	3.7	6.6

NA Not available.

These special areas differ in resources used as well as in income (Table 43). At the one extreme are the few highly specialized dairy farms of the Southern California area with their large capital values, labor force, and income. The concentration of these farms near and within the Los Angeles metropolitan area has resulted in fantastic real estate values on a per farm basis. The total investment of approximately $140,000 per farm is over twice that in the California Inner Valley and almost four times that in the Puget Sound-Coastal subregions. Investment in other special areas is from three-tenths to one-tenth this amount. If the investment is expressed on a per cow basis, the Los Angeles dairymen have a smaller investment than is found in any other area except along the Gulf Coast. Their total investment per cow is less than half that of the Puget Sound and the Intermountain areas, and only a little more than one-half of the investment per cow for dairy farmers of the Inner Valley of California.

Table 43.—Size of Dairy Farms, by Special Dairy Areas: 1954

Item	Special dairy area							
	Atlantic Coast (Subregions 3, 4, 5, 11, 12, 13, 14, 16)	Nashville Basin (Subregion 54)	Gulf Coastal (Subregion 58)	Ozark-Springfield (Subregions 73 and 82)	Snake River-Utah Valley (Subregion 112)	Southern California (Subregion 115)	California Inner Valley (Subregion 116)	Puget Sound-Coastal (Subregions 118 and 119)
Number of farms	26,073	6,681	2,730	23,017	8,459	1,101	8,783	12,321
Average per farm:								
All land in farms, acres	152	143	143	169	102	183	104	109
Cropland harvested, do	73	36	26	34	14	32	36	29
All farms products sold, dollars	(NA)	3,126	7,040	2,595	5,185	107,035	13,814	7,273
Investment in—								
Land and buildings, do	27,274	11,198	14,930	8,228	22,233	102,933	43,375	26,873
Machinery, do	6,823	2,468	3,007	2,376	4,046	6,464	5,068	4,331
Livestock, do	5,593	2,055	2,799	1,878	3,293	27,105	8,231	3,593
Total, do	39,690	15,721	20,736	12,482	29,572	136,502	56,674	34,797
Man-equivalent, number	1.9	1.3	1.5	1.3	1.1	5.6	1.7	1.3
Milk cows, do	25	15	32	12	15	178	41	21
Animal units, do	48	23	44	19	25	210	59	30

NA Not available.

Another comparison that may be made to show the relation between resources used and income are the number of years of income required to equal the value of real estate.

To the extent that specified expenses reflect the total expenses on the dairy farms of these special areas the dairymen of Southern California are better able to make out on their large real estate investment than those of other areas with much smaller investments. The cost of cow turnover every 2 years is not considered in the expenses, however, and when a reasonable figure is allowed for this yearly cost the number of years required for the net farm income to equal the real estate value is increased. It is also possible that the wages paid the milkers are nearer $5,000 per year than the average wage rate of the special area, which is $3,200. These two adjustments could easily double the number of years required for the yearly net farm income to equal the value of the real estate. Even with this type of adjustment, these dairymen appear to be in much better position to pay out on their farms than those of other areas.

The size of the milking herd on the dairy farms of the special areas also varies greatly (Table 44). The smallest herds are in the Ozark-Springfield area where dairying is more generally distributed than elsewhere. Nearly one-half of the dairy farms of this area have fewer than 10 cows per farm and less than 15 percent have more than 20 cows. Almost one-half of the 51,000 commercial farms are classed as dairy farms.

Both the Nashville Basin and the Snake River-Utah Valley areas average 15 milk cows per herd with 40 and 36 percent respectively having fewer than 10 cows per herd. The largest herds are in California, the Inner Valley showing an average of 41 milk cows per herd while the Southern California area has the unusual average of 178 cows. The most nearly uniform distribution of herds among the different size groups is in the Puget Sound-Coastal area where 28 percent of the herds have fewer than 10 cows per farm and 23 percent have more than 30 cows.

Milk is sold either as whole milk or cream. Census figures show the amount received for each so that the percentage of the total milk check received from the sale of each is easily obtained. It is not possible, however, to show the quantity of whole milk being used for manufactured products in comparison with that used for fluid consumption. This diversion of whole milk from fluid consumption to manufactured products affects the price received by the farmer because manufactured dairy products carry a lower value for that portion of the whole milk than when used for fluid consumption. The price is also affected by conditions surrounding the special area under consideration, some of which may be unique to that area. These factors and conditions affect the price of milk in any area. In only one area, Economic Subregions 118 and 119, does the sale of cream exceed 2 percent of the total milk check (Table 45).

Table 44.—Distribution of Dairy Farms by Size of Herd, for Special Dairy Areas: 1954

Item	Special dairy area							
	Atlantic Coast (Subregions 3, 4, 5, 11, 12, 13, 14, 16)	Nashville Basin (Subregion 54)	Gulf Coastal (Subregion 58)	Ozark-Springfield (Subregions 73 and 82)	Snake River-Utah Valley (Subregion 112)	Southern California (Subregion 115)	California Inner Valley (Subregion 116)	Puget Sound-Coastal (Subregions 118 and 119)
Number of farms	26,073	6,681	2,730	23,017	8,459	1,101	8,783	12,321
Average number of milk cows per farm	25	15	32	12	15	178	41	21
	Percent distribution							
Size of herd (number of milk cows):								
All farms	100	100	100	100	100	100	100	100
Under 5	2	9	1	10	6	(Z)	3	9
5 to 9	10	31	3	35	30	(Z)	8	19
10 to 14	16	25	5	28	27	1	12	16
15 to 19	17	12	15	13	15	1	10	12
20 to 29	27	13	30	10	14	4	18	21
30 to 49	20	8	34	3	6	3	24	17
50 to 99	7	2	11	1	2	24	18	5
100 and over	1	(Z)	1	(Z)	(Z)	67	7	1

Z 0.5 percent or less.

Table 45.—Milk and Cream Sold per Milk Cow on Dairy Farms, by Special Dairy Areas: 1954

Item	Special dairy area							
	Atlantic Coast (Subregions 3, 4, 5, 11, 12, 13, 14, 16)	Nashville Basin (Subregion 54)	Gulf Coastal (Subregion 58)	Ozark-Springfield (Subregions 73 and 82)	Snake River-Utah Valley (Subregion 112)	Southern California (Subregion 115)	California Inner Valley (Subregion 116)	Puget Sound-Coastal (Subregions 118 and 119)
Dairy farms—number	26,073	6,681	2,730	23,017	8,459	1,101	8,783	12,321
Milk and cream sold per cow—dollars	351	139	198	150	245	548	273	288
Whole milk sold per cow—do	350	138	198	149	243	548	273	283
Cream sold per cow—do	1	1	(Z)	1	2	(Z)	(Z)	5
Milk sold per cow (milk equivalent)—pounds	7,200	3,979	3,671	4,634	7,218	11,112	7,643	7,031
Value of milk and cream sold pounds, milk equivalent, per hundred weight—dollars	4.87	3.49	5.39	3.24	3.39	4.93	3.57	4.10

Z Less than 0.50.

The volume of business as well as the sources of income of these specified areas reflect the range of conditions under which the dairy farmers operate (Table 46). In those areas where alternative uses are limited to farming operations the productivity of the soil is a good indication of usual income. Economic Subregions 54 or 73 and 82 have less productive land than Economic Subregions 58 or 118 and 119. They are more diversified in their farming operations and have smaller total incomes.

Where the location of the dairy farm offers valuable alternative uses the price of real estate is established more by its use for other activities than by feed production for a dairy herd. Intensive agricultural use must follow if these farms are to pay out. The so-called dairy farms of the Los Angeles area illustrate how dairymen meet this situation. Their income per farm, per cow, and per acre of land, as well as the real estate value are outstandingly greater than for any other area.

There is considerable difference in the mechanization of these farms as shown in the special lists of farm machinery (Table 47). Subregion 54 has the least mechanization, the two California areas have the most. The California Inner Valley, Subregion 116, has the most milking machines, tractors, motortrucks, and automobiles and just as much field machinery. On the other hand, the smallest amount of field machinery is found on the dairy farms in the Southern California area where there is a small acreage of harvested cropland. The dairymen of these two areas also have more of the specified home facilities—probably indicating the relatively large incomes of the groups. The Ozark-Springfield area, Subregions 73 and 82, has fewer of the facilities for the home than the other special subregions. They also have fewer cows and less total farm income.

The number of farm operators under 35 years of age is greatest in the Gulf Coast and two California areas (Table 48). These areas also have the fewest operators over 54 years old. In the discussion of the age of operators in the major dairy areas it was brought out that there were not enough young farmers in any of the areas to offset the number of farmers over 54 years. The three above-mentioned special dairy areas come nearer meeting this situation than any others. Most of the special areas have as many or more operators over 64 years old as under 35.

Table 46.—Sources of Farm Income for Dairy Farms, by Special Dairy Areas: 1954

Special dairy areas	Subregions included	Total income per farm	Percent of farm income from—				
			Dairy products	Poultry and poultry products	Other livestock and livestock products	Field crops	Cash crops
Atlantic Coast	3, 4, 5, 11, 12, 13, 14, 16.	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Nashville Basin	54	$3,126	66	2	19	12	1
Gulf Coastal	58	7,040	88	1	7	3	1
Ozark-Springfield	73, 82	2,595	70	4	19	6	1
Snake River-Utah Valley	112	5,185	68	(Z)	14	14	(Z)
Southern California	115	107,035	92		7	1	
California Inner Valley	116	13,814	82	1	8	8	1
Puget Sound-Coastal	118, 119	7,273	85	2	8	2	3

Z 0.5 percent or less.
NA Not available.

Table 47.—Farm Mechanization and Home Conveniences on Dairy Farms, by Special Dairy Areas: 1954

Item	Special dairy area							
	Atlantic Coast (Subregions 3, 4, 5, 11, 12, 13, 14, 16)	Nashville Basin (Subregion 54)	Gulf Coastal (Subregion 58)	Ozark-Springfield (Subregions 73 and 82)	Snake River-Utah Valley (Subregion 112)	Southern California (Subregion 115)	California Inner Valley (Subregion 116)	Puget Sound-Coastal (Subregions 118 and 119)
Number of farms	26,073	6,681	2,730	23,017	8,459	1,101	8,783	12,321
Percent of farms reporting:								
Milking machine	84	29	79	36	81	96	92	82
Power feed grinder	25	16	16	15	16	15	10	12
Electric pig brooder	2	2	1	1	2	1	1	1
Farm tractors	93	47	67	60	81	45	79	85
Automobiles	90	66	64	57	88	94	90	87
Field forage harvesters	23	3	5	4	10	10	13	11
Motortrucks	76	38	61	53	62	74	74	63
Pick-up balers	47	9	6	8	19	9	18	13
Grain combines	29	12	5	7	15	1	2	8
Corn pickers	23	5	5	1	1	(Z)	1	(Z)
Telephone	83	60	46	28	78	95	79	78
Electricity	99	97	99	95	98	100	100	99
Television	64	32	41	18	37	79	53	36
Piped water	93	52	92	42	93	99	98	97
Home freezer	60	22	59	19	40	58	50	37

Z 0.5 percent or less.

Table 48.—Distribution of Dairy Farmers by Age, for Special Dairy Areas: 1954

Item	Special dairy area							
	Atlantic Coast (Subregions 3, 4, 5, 11, 12, 13, 14, 16)	Nashville Basin (Subregion 54)	Gulf Coastal (Subregion 58)	Ozark-Springfield (Subregions 73 and 82)	Snake River-Utah Valley (Subregion 112)	Southern California (Subregion 115)	California Inner Valley (Subregion 116)	Puget Sound-Coastal (Subregions 118 and 119)
Number of farms	26,073	6,681	2,730	23,017	8,459	1,101	8,783	12,321
	Percent distribution							
Age groups: Total	100	100	100	100	100	100	100	100
Under 25 years	3	1	1	1	1	2	1	1
25 to 34 years	15	9	19	12	13	16	17	12
35 to 44 years	23	23	26	22	26	32	28	23
45 to 54 years	23	24	31	26	25	27	27	25
55 to 64 years	21	23	15	24	21	15	18	23
65 years and over	15	20	8	15	14	8	9	16

The cropping systems have some conspicuous differences (Table 49). In all the special western areas, more than half of the harvested cropland is in hay. Grains are grown on the remaining cropland. Corn either for grain or for silage, is the chief grain crop in the areas east of the Rockies, whereas wheat or barley is the main cereal in the Snake River-Utah Valley subregion and small grains, oats and barley, are found along the western coast. A small quantity of hayland characterizes the dairy farms of the special areas east of the Rockies.

A common characteristic of all these areas, except Subregions 115 and 116, is the extent of pastureland per farm. In each area there are from 2 to 10 acres of pastureland per milk cow. Subregion 115 has three-fourths of an acre of pasture per cow; Subregion 116 shows an average of one and one-half acres. The high price of land in the parts of these two areas with dairy-cow concentration prevents its extensive use for pasture. Class by class, the value of farm land and buildings is equalled only by the value of dairy farms in the irrigated valleys of Subregion 112. The per acre value of land and buildings of the dairy farms in the special areas is generally less than half of the value in the three above areas. The only livestock on these farms in appreciable numbers is cattle. Milk cows and cattle raised for replacement are supplemented on some farms by a few chickens, a small flock of sheep, and possibly a half-dozen hogs. None of these classes of livestock is large enough in the organization to justify being called an enterprise.

The labor force per farm is probably the most constant factor discussed (Table 50). With one exception the average man-equivalent varied from 1.1 to 1.9, less than one-third being hired help. The resources used and the work accomplished by the labor force was greatly different in different areas. Fully two-thirds of the labor force on a dairy farm is used to feed and care for the dairy herd. Yet in some of these areas one man-equivalent was available for each 11 milk cows while in others it cared for twice as many cows. To some extent, of course, this reflects differences in the proportion of feed produced on the farm. The range in value of sales per man-equivalent showed twice this range. This emphasizes the point frequently made that the dairy farm of usual size is too small to utilize its resources effectively, especially the labor that is available for farmwork. The man-equivalent dropped almost consistently as size of farm decreased and it was used much less effectively with decreasing size. When the total income per man is $2,000 or $3,000 and farm expenses and cost must be met out of this amount there is little left for increasing the standards of living.

Table 49.—Farm Organization of Dairy Farms, by Special Dairy Areas: 1954

Item	Special dairy area							
	Atlantic Coast (Subregions 3, 4, 5, 11, 12, 13, 14, 16)	Nashville Basin (Subregion 54)	Gulf Coastal (Subregion 58)	Ozark-Springfield (Subregions 73 and 82)	Snake River-Utah Valley (Subregion 112)	Southern California (Subregion 115)	California Inner Valley (Subregion 116)	Puget Sound-Coastal (Subregions 118 and 119)
Number of farms	26,073	6,681	2,730	23,017	8,459	1,101	8,783	12,321
Average per farm:								
All land in farms—acres	152	143	143	169	102	183	104	109
Cropland harvested—do	73	36	26	34	44	32	36	29
Cropland pastured—do	18	33	30	32	12	28	32	24
Cropland not harvested and not pastured—do	3	4	2	3	5	5	4	2
Total cropland—do	94	73	58	69	61	65	72	55
Total land pastured—do	48	92	93	118	43	124	58	56
Livestock:								
All cattle—number	39	25	53	23	32	239	72	36
Milk cows—do	25	15	32	12	15	178	41	21
Hogs—do	5	7	3	4	2	1	1	1
Chickens—do	129	58	33	53	44	24	30	39
Sheep—do	1	5	2	1	3	2	(Z)	2
Percent of cropland harvested in:								
Corn for all purposes—percent	26	33	43	17	6	7	9	2
Corn for grain—do	15	24	38	3	1	(Z)	1	(Z)
Small grains—do	23	19	4	28	28	12	8	17
All hay—do	49	42	32	42	52	66	73	74
Other crops—do	2	6	21	13	14	15	10	7

Z 0.5 percent or less.

Table 50.—Sources of Labor on Dairy Farms, by Special Dairy Areas: 1954

Item	Special dairy area							
	Atlantic Coast (Subregions 3, 4, 5, 11, 12, 13, 14, 16)	Nashville Basin (Subregion 54)	Gulf Coastal (Subregion 58)	Ozark-Springfield (Subregions 73 and 82)	Snake River-Utah Valley (Subregion 112)	Southern California (Subregion 115)	California Inner Valley (Subregion 116)	Puget Sound-Coastal (Subregions 118 and 119)
Number of farms	26,073	6,681	2,730	23,017	8,459	1,101	8,783	12,321
Total man-equivalent per farm	1.9	1.3	1.5	1.3	1.1	5.6	1.7	1.3
Operator	.8	.8	.8	.8	.7	.9	.8	.7
Unpaid family help	.4	.3	.4	.4	.3	.2	.4	.4
Hired labor	.7	.2	.3	.1	.1	4.5	.5	.2
Average per man-equivalent:								
Cropland, total—acres	38	56	39	53	55	12	42	42
Total sales—dollars	(NA)	2,405	4,693	1,996	4,714	19,113	8,126	5,595
Milk cows—number	13	12	21	9	14	32	24	16

NA Not available.

Figure 17.

THE ATLANTIC COAST AREA
(Economic Subregions 3, 4, 5, 11, 12, 13, 14, 16)

In some respects this is not a special dairy area. Its milk production adds materially to the supply for the industrialized urban East, and its proximity to the Northeastern Dairy Region along with the variety of the output suggests some special treatment. Its location makes it assume the role of a transition area, where, because of its unlimited market for all farm products including milk, it can continue to increase production. Though milk production is a minor part of the food contribution to the industrial East from this region the sale of 5,233 million pounds of whole milk and cream from the 760,000 milk cows is a real contribution (Table 51). Approximately one-third of the commercial farms are dairy farms. These farms account for 86 percent of all milk cows, and 90 percent of total milk sales from the area. Less than 1 percent of all milk is sold as cream and 56 percent of this comes from the few cows on nondairy farms. More than half of this quantity is sold from Economic Subregion 16—the subregion that centers in Adams County in Southeastern Pennsylvania.

Table 51.—Milk Cows and Milk Production, for the Atlantic Coast Area: 1954

Item	Number of farms	Milk cows (number)	Milk and cream sold		
			Total milk (pounds)	Whole milk (pounds)	Milk as cream (pounds, milk equivalent)
All commercial farms	75,417	760,066	5,232,694,847	5,195,587,473	37,107,374
Dairy farms	26,073	655,910	4,722,440,845	4,706,002,029	16,438,816
Percent dairy	34.6	86.3	90.2	90.6	44.3

The following brief statement without all the detailed production figures is planned to show the contribution this region makes to the general dairy picture. The whole area is essentially industrial and commercial with a population of 30 million people in 1950. Although one-fifth of the population of the nation was here at that time it has only one-eighteenth of the land of the country and approximately one-half of this land lies within designated State metropolitan economic areas. It is the most densely populated area of the United States, having around 600 persons per square mile. Different forms of manufacturing are the chief occupation of the urban people.

The farms occupy slightly less than half of the land and use less than 3½ percent of the total labor force. Almost every form of intensely operated agricultural production which leads to a high degree of specialization is found here. Because of this the term "mixed farming" is most appropriate for its agriculture. More than half of the farms are classed as dairy or poultry farms. Vegetables, small fruits, tobacco, and other special crop and livestock types account for the remaining farms.

Its subregions vary considerably in the proportion of the different types of farms although every economic subregion produces practically every commodity found in this general region. Within each subregion are found small areas devoted almost exclusively to one special enterprise while a neighboring locality with apparently similar soil, topography, and market possibilities, is used for a completely different enterprise.

Five of the economic subregions, numbers 4, 11, 12, 13, and 16, have a larger proportion of dairy herds than any other type while poultry farms account for more of the farms in Subregions 3 and 5. Central New Jersey, Subregion 14, has about the same number of vegetable, poultry, and dairy farms. In practically every part of the area employees of industrial or commercial concerns live in rural communities and commute to work. This results in many part-time or residential farms whose owners produce some crop or livestock products for market. They ordinarily consume much more than they produce so that as long as they are employed these workers create markets for local produce. Noncommercial operators account for two-fifths of all farmers.

A statement of the development of agriculture in Connecticut may well characterize the area. Early records indicate that its citizens considered theirs a manufacturing State even before 1800, when nine-tenths of the population depended on agriculture for a living. Each form of manufacturing of that time was essentially a home enterprise. Gradually farmers who were more proficient in some activity began specializing in the production of that one commodity by hiring one or more helpers. These special commodities were then exchanged with neighbors whose developing specialties were along other lines.

As these home enterprises developed, factories were built on the farms or in the nearby villages and the help continued to be recruited from neighboring farms. This meant that early in the development of the State there were many part-time farmers or, as they may as well be called, part-time factory workers.

The advent of hard surfaced roads, and especially the coming of automobiles, resulted in a shift from the more general farming and crafts to activities that required special buildings and equipment, as well as trained workers, for more economical operation. A two-way movement of the population resulted. Many farm people continued to live in the country, but took part-time or full-time work in neighboring urban communities, while urban employees moved to the country and commuted to work. As a result of this kind of activity, more than one-third of all farmers were classed as part-time farmers 20 years ago.[3] This situation has changed little. In 1954, almost 40 percent of all Connecticut farmers were noncommercial operators.

Cranberry growing is an important industry in Subregion 3, while tobacco production in the Connecticut River Valley of Subregion 4 is one of the high-income crops. The farmland around New York City is most valuable. It can pay out only by being used for the most intensive forms of production. Small acreages used for growing plants and flowers under glass, some potato growing, and a few poultry farms, illustrate the type of production adapted to this land.

[3] Adapted from "Types of Farming and Type-of-Farming Areas in Connecticut," Bulletin 213. I. G. Davis. Connecticut State College, Storrs, Connecticut.

The most completely agriculturally developed parts of the area are in Economic Subregions 11, 12, 13, 14, and 16.

Most of these farms are of average size. Less than 8 percent are in the two economic classes with the smallest incomes and only 6 or 7 percent in the class of largest farms, Economic Class I (Table 52).

Table 52.—Number of Dairy Farms, by Economic Class, for the Atlantic Coast Area: 1954

Subregion	Total dairy farms	Number of farms by economic class					
		I	II	III	IV	V	VI
Atlantic Coast Area	26,073	1,651	9,161	8,649	4,586	1,721	305
Subregion 3	1,929	197	616	511	435	140	30
Subregion 4	3,948	286	1,201	1,301	765	325	70
Subregion 5	3,138	454	1,665	692	236	81	10
Subregion 11	2,230	25	241	805	824	315	20
Subregion 12	2,547	127	925	970	345	150	30
Subregion 13	2,657	126	1,186	880	360	95	10
Subregion 14	556	86	305	105	35	25	------
Subregion 16	9,068	350	3,022	3,385	1,586	590	135

The cropping pattern of the New England part of this area is considerably different from the southern part. Hay crops dominate the former, representing nearly six-sevenths of the harvested acreage and corn occupies about one-seventh. Small acreages of potatoes, tobacco, and truck crops occupy not more than one-twentieth of the harvested cropland while practically no small grains are grown.

The southern part of the area, consisting mainly of farms in Eastern Pennsylvania and Northern New Jersey, has more corn, some small grain and much less hay in the cropping system than the northern part of the area. Hay occupies a little over two-fifths of the harvested crop acreage whereas corn acreage accounts for about one-third and small grain, especially wheat, is grown on all but five percent of the remainder. Truck crops and potatoes use relatively few acres throughout the area, but because of their high per-acre value they add materially to the farm income.

The dairy farms of this area grow more hay and corn and less grain and truck crops than the average of all commercial farms (Table 53). Their cropping system approximates a 6-year system of hay for 3 years followed by 2 years of corn and 1 of small grain. A few acres of cash crops may substitute for any of these standard crops.

Table 53.—Crop Acreage per Farm on Dairy Farms, by Economic Class, for the Atlantic Coast Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	26,073	1,651	9,161	8,649	4,586	1,721	305
Total acres	152	342	178	131	101	82	72
Cropland, total—acres	94	214	113	81	58	44	36
Harvested—do	73	156	90	65	44	30	22
Pastured—do	18	53	21	14	11	10	10
Not harvested and not pastured—acres	3	5	3	2	3	4	4
Crops:							
Corn—do	19	38	24	17	10	6	4
All hay—do	36	94	43	29	21	16	12
Wheat—do	7	11	10	8	4	3	1
All other crops—do	11	13	13	11	9	5	5

The average value of farm products sold from all farms of the area was a little over $8,000 per farm. Approximately two-thirds of this was from the sale of livestock and livestock products, while the remaining third was from special and field crops. Less than one-half percent of all farm sales was from forest products. Slightly more than one-fourth of all farms are in the New England part of the area and the income from these farms was about $500 more per farm than in the southern part. They sold more than a fourth of all farm products of the area as well as over two-fifths of the small quantity of forest products.

Total livestock sales from the dairy farms show an average of $10,302 per farm in comparison with a little over half this amount for all the farms of the area (Table 54). Eighty-six percent of this was from milk sales, while another seven percent was from the sale of cows and youngstock. The sale of poultry products, hogs, and sheep account for less than seven percent of the total livestock sales. The smaller farms were slightly more diversified than the larger farms in that they received but three-fourths of their livestock income from the sale of milk while the largest farms received seven-eighths. Cream sales throughout the area were almost nonexistent.

Table 54.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Atlantic Coast Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	26,073	1,651	9,161	8,649	4,586	1,721	305
Milk sold per milk cow—pounds	7,200	8,831	7,546	6,446	5,267	4,423	2,675
Sales per farm:							
Milk—dollars	8,819	34,812	11,756	5,568	3,019	1,498	563
Cattle and calves—do	805	3,574	986	491	319	182	109
Hogs—do	123	230	155	119	67	34	16
Poultry products except eggs—dollars	142	565	196	84	44	30	6
Eggs—do	403	977	582	316	151	77	41
Sheep—do	5	18	6	4	3	2	------
Other livestock and livestock products—dollars	5	16	4	4	3	3	3
Total, livestock and livestock products—dollars	10,302	40,192	13,685	6,586	3,606	1,826	738

Specified farm expenses range from a little more than half the total livestock income for the largest farms to slightly more than all livestock income for the smallest farms (Table 55). Feed costs account for more than half these expenses for all classes except Class I. Hired labor is the next highest item of expense except on the smaller farms, where it is replaced by costs of gas and oil. Both the volume of livestock sales and the size of the specified expenses emphasize the problem faced by the smaller farmers in the effective use of resources.

Table 55.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Atlantic Coast Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	26,073	1,651	9,161	8,649	4,586	1,721	305
Average per farm:							
Machine hire—dollars	193	279	221	192	151	104	53
Hired labor—do	1,348	8,182	1,674	555	273	131	54
Feed—do	3,254	10,687	4,158	2,376	1,516	840	527
Gas and oil—do	510	1,363	633	414	289	177	125
Fertilizer—do	483	1,394	653	374	190	111	51
Lime—do	66	211	88	44	29	22	6
Total—do	5,854	22,113	7,427	3,955	2,448	1,385	816
Average per crop acre:							
Machine hire—do	2	1	2	2	3	2	1
Hired labor—do	14	38	15	7	5	3	2
Feed—do	35	50	37	29	26	19	15
Gas and oil—do	5	6	6	5	5	4	4
Fertilizer—do	5	7	6	5	3	3	1
Lime—do	1	1	1	1	1	1	(Z)
Total—do	62	103	67	49	43	32	23

Z Less than 0.50.

These farmers used more fertilizer than was used on most dairy farms and more was used on the smaller farms (Table 56). The rate of application was nearly twice as high as was used in the northwest and the number using fertilizer was greater than for most areas. From one-fourth to one-half as many farmers used lime as used fertilizer and the rate of application of more than a ton per acre was also more than dairy farmers of other areas used.

Table 56.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for the Atlantic Coast Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	26,073	1,651	9,161	8,649	4,586	1,721	305
Fertilizer:							
Percent of farms using	88.0	91.3	93.9	89.8	80.9	70.3	49.2
Tons used per farm reporting	1	31	14	8	5	3	2
Acres upon which used per farm reporting	55	133	68	44	28	19	16
Average per acre fertilized:							
Pounds	396	462	405	360	349	343	299
Cost, dollars	10	11	10	10	9	8	7
Lime:							
Percent of farms using	42.5	63.2	51.8	39.2	32.0	23.5	11.5
Acres upon which used per farm reporting	20	40	21	16	12	14	7
Average per acre limed:							
Pounds	2,351	2,303	2,331	2,364	2,508	2,429	2,462
Cost, dollars	8	8	8	7	7	7	7

THE NASHVILLE BASIN AREA
(Economic Subregion 54)

The Nashville Basin, Subregion 54, is an island of comparatively fertile soil within a larger stretch of more rugged and less fertile land. It is small, about 120 miles long and 60 miles wide. The land is gently undulating to rolling with occasional ridges or broken sections. These stony ridges along with rough sections at the outer edges of the basin contain land that is useful mainly for pasture or woodland.

The soils are residual, of limestone origin, and very fertile. Nearly nine-tenths of the area is occupied by farms. This makes it one of the heaviest concentrations of farms in the South. The farms in general are small, averaging less than 100 acres. Approximately one-half of the land is classed as cropland but crops are harvested from only two-thirds of this acreage.

It is recognized as one of the major dairy areas of the South. Slightly more than one-third of the commercial farms are so classed. Another 30 percent are cash-crop farms. Most of the remaining one-third are livestock other than dairy, or general, farms. This suggests a varied agriculture where livestock enterprises are supplemented with or are in direct competition with cash crops. Although the sale of livestock products accounts for more than half the farm income in every part of the area, such cash crops as tobacco or cotton are important producers of income.

The metropolitan area is in the northern part of the basin around Nashville, which is the second largest city in the State. It has experienced a slow but steady growth. The large labor force is employed in making such products as nylon, cellophane, clothing, artcraft, furniture, and electrical appliances. Limestone for building purposes is quarried here.

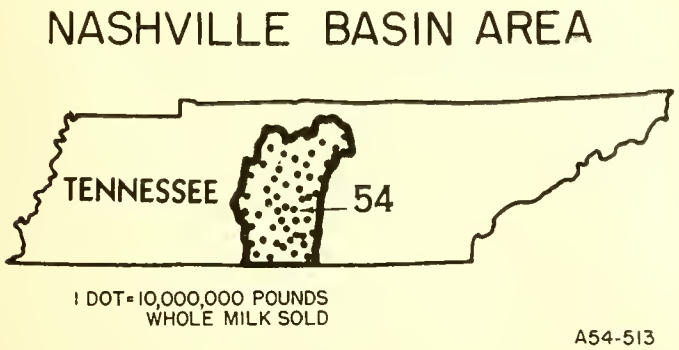

Figure 18.

Most of the dairy farms are in the southern half of the subregion rather than in the counties contiguous to the metropolitan area. The reason may well be that the earlier cream market found outlets within the territory and later, when markets for fluid milk developed, the slightly longer haul made little difference to the dairymen. Fifteen years ago, for example, there were as many farmers selling cream in the State as there were selling fluid milk. In 1954, only one-seventh as many farmers were selling cream. During this period fluid-milk sales per farm nearly doubled, although the number of dairy farms decreased. In 1949, there were 7,002 dairy farms in this area. The 1954 figures show only 6,681 dairy farms or 34 percent of all commercial farms. Total milk cow numbers increased from 86,500 in 1949 to 99,000 in 1954.

The average size of the dairy farm has increased during the 5-year period between Censuses, from 126 acres with 68 acres total cropland to 143 total acres with 73 acres of cropland. A direct comparison of the size of herds by economic class cannot be made with the 1950 Census.

The 1954 Census of Agriculture shows a gradual decrease in the average size of herds with decreasing total income. There is an unusually large number of dairy farms with fewer than 15 milk cows per herd. Further, more than four-fifths of the farms are in Economic Classes IV, V, and VI, while only one-twenty-fifth are in Classes I and II.

Other indications of the size of farms are number of livestock kept as well as farm real estate value. They had only 23 animal units per farm and an average of $11,200 farm land and building value per farm or $82 per acre of land in farms. Nearly two-thirds of the 6,681 dairy farms had less than $2,500 total value of farm products sold, and six-sevenths of them sold less than $5,000 worth of farm produce. This means that the dairy farms of the area, by and large, have modest incomes of which over two-thirds is from the sale of milk and cream.

The cropping systems varied considerably with the economic class. The lower income farms, Economic Classes IV to VI, planted more corn and less hay and small-grain crops than the larger farms. The acreage of land pastured seems to depend more upon physical factors than upon the volume of business. No economic class showed much variation from the average of two-thirds of the total farm being used for pasturage.

The livestock organization of these farms showed little difference between the largest and the smallest. Approximately three-fifths of the animal units of each economic class were milk cows. The relative number of hogs on hand at the time the Census was taken remained the same regardless of the total number of animal units. Poultry flocks were just enough to meet family demands for eggs and meat. A flock of 500 birds is too small to be given the special care required of an income-producing enterprise. These farms were stocked about the same when expressed in terms of total cropland per animal unit. Only one economic class showed as much as 10 percent variation from the average 3.2 acres of total cropland per animal unit. Harvested cropland has less significance on dairy farms in the South where winters are shorter and grazing seasons longer.

The smaller farms had no bigger portion of their income from the sale of crops than the larger farms (Table 57). Around one-eighth of the total value of sales of the smallest, as well as the largest, farms was from crop sales. This suggests that the larger farms of this area with dairy cows tend to specialize no more than do the smaller farms. Ten percent of the livestock income during 1954 was from the sale of hogs in comparison with 5 percent for the small farms. On the other hand, the smaller farms receive 25 percent of their livestock income from the sale of cattle in comparison with only 10 percent on the larger farms.

Table 57.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Nashville Basin Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	6,681	37	255	848	1,396	2,435	1,710
Gross sales—							
Per farm dollars	3,126	34,632	13,019	6,756	3,476	1,799	775
Per crop acre do	43	67	66	54	40	33	23
Percent of gross sales from dairy products	66	70	71	72	62	59	61
Sales per farm:							
Milk dollars	2,063	24,390	9,284	4,833	2,169	1,056	476
Cattle and calves do	345	2,469	1,366	596	391	254	114
Hogs do	179	2,325	931	378	218	82	29
Poultry products except eggs dollars	8	13	30	17	9	7	3
Eggs do	61	97	215	91	70	49	31
Sheep do	44	989	161	92	49	25	6
Other livestock and livestock products dollars	15	226	48	27	18	9	4
Total, livestock and livestock products dollars	2,715	30,509	12,035	6,034	2,924	1,482	663
Field crops do	388	4,111	817	680	534	302	103
Other crops [1] do	23	12	167	42	18	15	9
Total crops do	411	4,123	984	722	552	317	112

[1] Includes horticultural and forest products.

The smaller farms were operated less intensively than the larger dairy farms (Table 58). This shows up both in the input or specified expense items and in the gross sales per acre of cropland. Specified expenses dropped from $25 per acre for the farms of largest volume to $9 for the smallest, while the gross sales showed the same general relationship. The largest farms averaged $67 gross sales per crop acre. There was a consistent and continuous drop in income per acre as farms became smaller. The smallest farms with only 5 milk cows sold only $23 worth of farm products per acre of harvested crops during the year.

Table 58.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Nashville Basin Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	6,681	37	255	848	1,396	2,435	1,710
Average per farm:							
Machine hire dollars	77	371	256	184	88	46	26
Hired labor do	222	4,897	1,499	605	149	66	22
Feed do	754	4,207	3,338	1,803	746	446	218
Gas and oil do	153	1,829	682	341	185	78	26
Fertilizer do	121	1,893	466	280	126	64	29
Lime do	4	29	17	12	7	1	(Z)
Total do	1,331	13,226	6,258	3,225	1,301	701	321
Average per crop acre:							
Machine hire do							
Hired labor do	3	9	8	5	2	1	1
Feed do	10	8	17	14	9	8	6
Gas and oil do	2	4	3	3	2	1	1
Fertilizer do	2	4	2	2	1	1	1
Lime do	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Total do	17	25	30	24	14	11	9

Z Less than 0.50.

Although measures of effective use of resources or efficiency are few and not very conclusive, total value of sales minus the specified expenses for the different economic classes suggests that operators in the three lower income classes must have very little money to meet living costs (Table 59).

Both the value of milk sales per cow and the pounds of milk sold indicate decreasing effectiveness in use of feed, as well as other factors contributing to milk production. It is again emphasized that man labor cannot be used effectively on the smaller farms.

Table 59.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the Nashville Basin Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	6,681	37	255	848	1,396	2,435	1,710
Gross sales per farm dollars	3,126	34,632	13,019	6,756	3,476	1,799	775
Specified expenses per farm do	1,331	13,226	6,258	3,225	1,301	701	321
Gross sales less specified expenses per farm do	1,795	21,406	6,761	3,531	2,175	1,098	454
Gross sales per man-equivalent	2,405	6,926	5,425	3,974	2,897	1,635	775
Total investment—							
Per farm dollars	15,721	103,934	48,304	32,139	17,798	11,376	6,526
Per man-equivalent do	12,093	20,787	20,127	18,905	14,832	10,342	6,526
Per $100 gross sales do	507	300	372	473	509	632	816
Percent of sales of dairy products from cream	1				1	1	4
Milk sales per cow:							
Dollars	139	257	213	175	122	101	77
Pounds (milk equivalent)	3,979	7,407	4,963	4,385	3,939	3,276	2,708

Both capital investment and income per man-equivalent show why this is true.

It is surprising to find in area after area that dairymen in Economic Classes V and VI are receiving one-third to one-fourth of the milk and cream income per cow received by those in Classes I and II. For example, the dairymen in Economic Class VI received about one-third of the income per cow received by the Class I dairymen and they sold only about two-fifths as much milk per cow. Practically no cream or butterfat was sold by these dairymen so that the smaller income per cow was the result both of lower production per cow and a 60-cent lower price per hundredweight of milk.

Approximately two-thirds of the farmers are using some fertilizer (Table 60). Much is used on the tobacco and cotton crops, although some may have been used on ordinary field crops. The cost of fertilizer ranged from $40 to $58 per ton. Since the composition of the fertilizer was not given it is not possible to find how much of this range in cost is the result of the grade of fertilizer used. Fertilizer can be used on small farms almost as conveniently as on the larger ones, yet, whereas all of the larger farms used some fertilizer, only two-fifths of the farms with the smallest total incomes used any. The cost of liming materials, to the few farmers who used lime, was from $1.20 to $1.60 per ton but only about one-tenth as many dairymen used lime as used fertilizer.

Table 60.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for the Nashville Basin Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	6,681	37	255	848	1,396	2,435	1,710
Fertilizer:							
Percent of farms using	65	100	84	82	80	64	43
Tons used per farm reporting	4	41	12	6	3	2	2
Acres upon which used per farm reporting	29	204	87	49	27	16	13
Average per acre fertilized:							
Pounds	268	404	285	243	249	273	259
Cost dollars	6.45	9.30	6.38	7.00	5.74	6.16	5.36
Lime:							
Percent of farms using	6	11	20	18	8	2	(Z)
Acres upon which used per farm reporting	17	27	21	13	22	10	35
Average per acre limed:							
Pounds	3,058	7,196	3,483	3,328	2,737	2,514	800
Cost dollars	4.38	9.95	4.33	4.88	4.10	3.91	1.00

Z Less than 0.5.

Figure 19.

THE GULF COAST AREA
(Economic Subregion 58)

The topography of the Gulf Coast area is level to slightly rolling. The soils range from sandy to loams and are rather deficient in organic matter. They respond readily to farmyard manures and commercial fertilizers when moisture conditions are right. Average annual rainfall of 40 to 44 inches is plentiful but its distribution throughout the year is irregular and periods of moisture deficiency occur during the long growing season.

The soil in the western part is the southern termination of the brown loam soil belt and is good farmland. This is probably the most desirable part of the area for general agriculture and around one-third of the land is in farms.

To the east are the clay hills and higher lands which become flat along the north shore of Lake Ponchartrain. Forests originally covered much of these two sections and much of the nonfarm land is still well forested.

South of Lake Ponchartrain the land is mostly swampy and marshy with very little woods. Only about one-seventh is in farms. A few dairy farms and cattle raising are the chief types of farming in this part.

Much of the area that lies in Mississippi and extending into southwestern Alabama is not very well suited for growing crops because of flooding, or soils that are too sandy to hold water, and some "gumbo" soils with impervious subsoils. One-third of the land is in farms and one-half of this is wooded. Dairying, livestock raising, and the growing of tung nuts, pecans, and cotton all contribute to the small agricultural output. Potatoes harvested for early northern markets are grown on some of the sandy soils.

Increase in milk cow numbers in Louisiana has been gradual since 1925 with only one or two exceptions. Since 1950, the increase has been more rapid. The growth of dairying is the result partly of increase in local population which was greater for Louisiana during the last 25 years than for the rest of the South, and partly of a consumer education program especially set up for younger people.[4] More jobs and better pay have provided a greater increase in expendable income for the area during this time than for the rest of the country. The greatest potential for increased use of milk is in the lower income group. It is in this group that the greatest relative increases have occurred. There is no reason to think aggregate consumption of dairy products will not increase during the next few decades.

The growth of shipbuilding and paper mills in Mobile and other seaport towns along with textile mills, food processing plants, lumber mills, chemical factories, and petroleum refineries in New Orleans, has boosted the urban population and increased the demand for all farm products. New Orleans still dominates as a seaport.

The standard of living over much of the area is low but has been increasing during the last 25 years. Almost one-half of the farms are classed as noncommercial; a large majority are on a subsistence level. Twenty percent of the 13,000 commercial farms are dairy farms and 26 percent are cotton farms. Some of the highest priced farmland of the State is in this area.

During the last 5 years there have been seasonal milk surpluses in this area. Surpluses appear in the spring and summer when pasture conditions are good, and no method has been devised to prevent these surpluses or to carry them over to the winter when seasonal milk production is low. Practically all of the milk from these dairymen is sold as whole milk.

These farms are not large when expressed in terms of acres of cropland or of capital invested. More cropland is used for pasture than for harvested crops. This is an economical way of producing feed for the dairy herd, especially if the pastured cropland is so handled as to produce its share of feed for the long growing season.

The cropping systems were variable among the economic classes. Corn harvested for either silage or grain was from less than one-fourth of the harvested cropland on the larger farms to one-half for the smaller farms. Hay acreage, however, was from one-fourth to one-fifth of the harvested cropland for every class. Other crops than grain constituted around one-third of the harvested cropland on most farms.

The livestock organization, on the other hand, was rather uniform when expressed in terms of the inventoried animals. The two groups of larger farms had slightly more cropland per cow than the smaller farms. In other words, the farms of these groups were less intensively operated than the smaller farms. All are much more heavily stocked than those of the Nashville Basin, having twice as many cows on less land. They have more livestock than the available cropland will support. Either the feed bills must be high or production per animal low. Fewer pigs and chickens are kept, but their decrease does not offset the larger number of cows.

The sale of dairy products accounts for nine-tenths of the total income of the dairy farms in comparison with only 66 percent from dairy farms in the Nashville Basin (Table 61). These figures again show the relatively small proportion of income received from other livestock than dairy. The larger farms were more diversified in both livestock and crop sales than the smaller farms. All had relatively large acreages of cash crops.

[4] Louisiana Rural Economist, Vol. 15, No. 1—February 1953. Department of Agriculture Economics, University Station, Baton Rouge, La.

The largest farms have somewhat less income per total crop acre than the medium-sized farms but much more than the two groups of smaller farms. Here again, the small farms fail to use their resources as effectively as the larger farms, and total incomes are exceedingly small—less than one-third of the income per crop acre of the group.

Table 61.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Gulf Coast Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	2,730	53	431	996	960	240	50
Gross sales—							
Per farm—dollars	7,040	40,586	14,028	6,816	3,876	1,971	813
Per crop acre—do	121	107	128	141	104	72	30
Percent of gross sales from dairy products	89	82	90	90	89	82	82
Sales per farm:							
Milk—dollars	6,240	33,041	12,586	6,154	3,447	1,619	666
Cattle and calves—do	413	2,775	748	344	270	213	103
Hogs—do	43	489	100	20	22	33	4
Poultry products except eggs—dollars	8	64	12	7	5	------	8
Eggs—do	48	392	77	50	28	6	8
Sheep—do	8	181	8	(Z)	8	------	------
Other livestock and livestock products—dollars	4	109	3	1	1	2	2
Total, livestock and livestock products—dollars	6,764	37,051	13,534	6,576	3,781	1,873	791
Field crops—do	266	2,957	330	182	67	75	21
Other crops [1]—do	70	578	164	58	28	23	1
Total crops [1]—do	276	3,535	494	240	95	98	22

Z Less than 0.50.
[1] Includes horticultural and forest products.

The largest expense item is for feed, hired labor comes second (Table 62). Specified expenses per crop acre are much lower on the small than on the large farms. The large farms averaged but $54 expenses per $100 income, whereas the small farms averaged $83.

Table 62.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Gulf Coast Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	2,730	53	431	996	960	240	50
Average per farm:							
Machine hire—dollars	80	238	163	78	48	43	12
Hired labor—do	502	6,458	1,468	286	99	62	16
Feed—do	2,846	10,822	5,206	2,969	1,778	1,077	576
Gas and oil—do	266	1,514	601	226	145	91	30
Fertilizer—do	381	2,753	734	332	217	146	73
Lime—do	35	197	64	38	18	14	10
Total—do	4,110	21,982	8,236	3,929	2,305	1,433	717
Average per crop acre:							
Machine hire—do	------	------	------	------	------	------	------
Hired labor—do	9	17	13	6	3	2	1
Feed—do	49	29	48	62	48	39	21
Gas and oil—do	5	4	6	5	4	3	1
Fertilizer—do	7	7	7	7	6	5	3
Lime—do	------	------	------	------	------	------	------
Total—do	70	57	74	80	61	49	26

Net income of these operators is not large. Production and sales of milk per cow are the lowest for any special dairy area (Table 63). The average price received per 100 pounds of milk is the highest of any area which indicates the type of market for fluid milk. Practically none is sold as cream. The quantity of whole milk used for manufactured dairy products is not known but the price received indicates that very little is used for other than fluid consumption. Alabama and Louisiana marketed 20 percent of the whole milk as manufactured products in 1954.

Table 63.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the Gulf Coast Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	2,730	53	431	996	960	240	50
Gross sales per farm—dollars	7,040	40,586	14,028	6,816	3,876	1,971	813
Specified expenses per farm—dollars	4,110	21,982	8,236	3,929	2,305	1,433	717
Gross sales less specified expenses per farm—dollars	2,930	18,604	5,792	2,887	1,571	538	96
Gross sales per man-equivalent	4,693	7,805	6,576	4,869	3,230	1,971	739
Total investment—							
Per farm—dollars	20,736	84,225	44,267	19,097	12,711	12,282	6,775
Per man-equivalent—do	13,824	16,197	20,121	13,641	10,592	12,282	6,159
Per $100 gross sales—do	296	207	316	281	326	614	847
Percent of sales of dairy products from cream	(Z)	(Z)	------	(Z)	(Z)	------	------
Milk sales per cow:							
Dollars	198	316	246	195	148	95	61
Pounds (milk equivalent)	3,671	4,858	4,481	3,631	2,981	2,122	1,040

Z Less than 0.5 percent.

Some fertilizer was used by a larger proportion of the smaller farms than any other economic subregion, and the rate of application of those using fertilizer was higher (Table 64). Most of the farms used the same rate of application and only the two groups of farms at the extremes of the economic class showed much variation from the average.

Table 64.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for the Gulf Coast Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	2,730	53	431	996	960	240	50
Fertilizer:							
Percent of farms using	81	83	85	84	80	73	70
Tons used per farm reporting	10	73	19	9	6	4	2
Acres upon which used per farm reporting	43	234	81	39	26	18	11
Average per acre fertilized:							
Pounds	480	619	481	453	452	468	335
Cost—dollars	10.88	14.15	10.75	10.19	10.48	11.25	9.08
Lime:							
Percent of farms using	21	34	24	27	15	8	10
Acres upon which used per farm reporting	28	82	49	22	17	28	5
Average per acre limed:							
Pounds	1,978	2,341	2,076	1,667	2,299	2,000	2,000
Cost—dollars	6.17	7.10	5.41	6.24	6.88	6.18	20.00

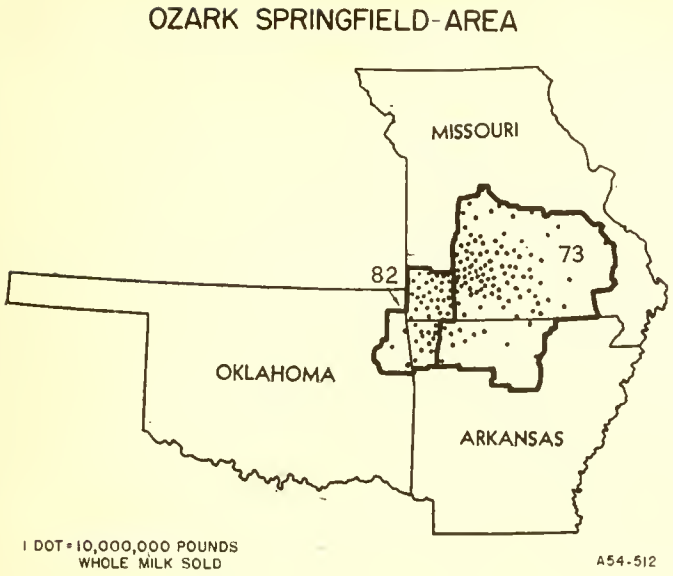

Figure 20.

THE OZARK-SPRINGFIELD AREA
(Economic Subregions 73 and 82)

The soils here are among the most infertile of the State of Missouri. Many of them have been "characterized in a number of studies as marginal or submarginal for crops." [5] The soils in the eastern part are stony and the topography almost always hilly, so very little of the land is under the plow. The 1950 Census showed less than half of the land of this part in farms and the harvested cropland occupied a smaller portion of the total land than in any other area of the State.

The topography of the central part is not so hilly or rough as in the eastern part. Some of the land here is fairly smooth but the soil has a hardpan that makes poor underdrainage. Late spring plantings are frequently the result and any prolonged period without rainfall brings the threat of crop loss. The soils in the western part are better adapted to crops than those of the middle or eastern parts. They are fairly deep and friable and seem well adapted to fruit production.

Normal monthly precipitation records show plentiful moisture for growing most crops, 40 to 44 inches. With regular rainfall, temperatures during the growing season are favorable for good crop production. But the rainfall is seldom normal or regular. Periods of excessive precipitation are followed by hot dry weather which makes crops a gamble both on the hardpan soils and on the stony or sandy soils with highly porous subsoils. In these circumstances small grains, which mature before the hottest and driest summer weather, are grown in preference to corn. Sorghums or other hot-weather crops also do well.

The area has about equal acreages of corn and hay. Approximately one-sixth of the harvested cropland is used for each. More than a fourth of the cropland is used for small grains, while other crops than these staples use the remaining 40 percent. There is little difference in the percentage distribution of the harvested cropland in the economic classes. All had relatively small acreages of corn and hay. The land seems better suited to pastures than to most crops and farmers have depended on livestock to utilize it. The gradual development of dairying over other forms of livestock production appears to be based upon the following considerations.[6]

1. Water supply is adequate and easily accessible. There are many running streams and springs throughout the area.
2. Gravel deposits, as well as a plentiful supply of stone, have made possible well-constructed all-weather roads at relatively small cost.
3. Dairy farming offers greater income than beef raising and provides a greater yearly return for family labor.

Not only are crop productions low but real estate values are among the lowest in the State. The highest values center in Green County where the city of Springfield is located. The high land values are the result of location and not of better crop productions.

The varied and adverse conditions under which production takes place shows up in the farm-income figures (Table 65). Figures for both total and per crop acres are low in comparison with other special dairy areas. The average total income of $2,595, or $37 per acre of total cropland, suggests the adverse conditions under which these farmers work. The income, both total and per acre, is less on the smaller farms. Even though there is considerable diversification in crop and livestock production within the area, the dairy farms are rather highly specialized. From two-thirds to three-fourths of all income is from the sales of milk and cream, while the sale of livestock, mostly dairy stock, adds another one-fifth to the income of the dairy farms.

Table 65.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Ozark-Springfield Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	23,017	39	516	1,962	5,182	8,988	6,330
Gross sales—							
Per farm ..... dollars	2,595	34,233	12,600	6,773	3,414	1,771	787
Per crop acre ..... do	37	83	63	50	39	31	19
Percent of gross sales from dairy products	70	75	74	71	69	68	68
Sales per farm:							
Milk ..... dollars	1,813	25,832	9,382	4,825	2,340	1,212	537
Cattle and calves ..... do	366	3,422	1,252	799	482	304	133
Hogs ..... do	110	2,175	488	295	161	68	27
Poultry products except eggs dollars	32	26	228	88	29	16	23
Eggs ..... do	69	54	167	144	106	56	27
Sheep ..... do	10	831	41	14	12	8	2
Other livestock and livestock products ..... dollars	7	35	14	10	8	8	3
Total, livestock and livestock products ..... dollars	2,407	32,375	11,572	6,175	3,138	1,672	752
Field crops ..... do	161	1,784	983	553	244	76	18
Other crops [1] ..... do	27	74	45	45	32	23	17
Total crops ..... do	188	1,858	1,028	598	276	99	35

[1] Includes horticultural and forest products.

[5] Types of Farming in Missouri, Hammar, Roth, Johnson, Research Bulletin 284, Missouri Agricultural Experiment Station, Columbia, Missouri. Those parts of the area that extend into Northern Arkansas and Northeast Oklahoma are similar to the bordering areas in Missouri.

[6] Marketing Dairy Products in Southwestern Missouri. M. B. Kirtley and C. C. Erwin, Bulletin 567, Agricultural Experiment Station, Columbia, Missouri.

Although the total expenses are low for the entire area the amount spent for feed is relatively large (Table 66). Where figures from most areas indicate around one-half of the specified expenses used to buy feed, these farmers used 60 percent for this purpose and the smaller farmers used proportionately more than the larger.

Table 66.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Ozark-Springfield Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	23,017	39	516	1,962	5,182	8,988	6,330
Average per farm:							
Machine hire, dollars	90	506	317	219	129	67	30
Hired labor, do	84	4,672	938	240	77	31	18
Feed, do	1,001	10,328	3,905	2,203	1,266	778	434
Gas and oil, do	135	1,195	524	342	187	97	45
Fertilizer, do	154	1,642	722	446	216	96	39
Lime, do	6	67	32	15	8	4	2
Total, do	1,470	18,410	6,438	3,465	1,883	1,073	568
Average per crop acre:							
Machine hire, do	1	1	2	2	1	1	1
Hired labor, do	1	11	5	2	1	1	(Z)
Feed, do	14	25	20	16	15	13	11
Gas and oil, do	2	3	3	3	2	2	1
Fertilizer, do	2	4	4	3	2	2	1
Lime, do	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Total, do	20	44	34	26	21	19	14

Z Less than 0.50.

Table 67.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the Ozark-Springfield Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	23,017	39	516	1,962	5,182	8,988	6,330
Gross sales per farm, dollars	2,595	34,233	12,600	6,773	3,414	1,771	787
Specified expenses per farm, dollars	1,470	18,410	6,438	3,465	1,883	1,073	568
Gross sales less specified expenses per farm, do	1,125	15,823	6,162	3,308	1,531	698	219
Gross sales per man-equivalent	1,996	8,558	6,300	4,515	2,626	1,610	715
Total investment—							
Per farm, dollars	12,482	87,686	38,569	25,903	15,410	10,168	6,848
Per man-equivalent, do	9,602	21,922	19,284	17,269	11,854	9,244	6,848
Per $100 gross sales, do	480	256	306	381	453	565	856
Percent of sales of dairy products from cream	1	------	(Z)	(Z)	1	1	4
Milk sales per cow:							
Dollars	150	384	261	211	157	118	81
Pounds (milk equivalent)	4,634	9,468	6,996	6,301	4,876	3,857	2,766

Z 0.5 percent or less.

Such measures of effective farming as sales less specified expenses, total sales per man-equivalent, and dollar or pound milk sales per cow, all show the less efficient use of resources on the smaller farms (Table 67). Perhaps this is what should be expected. It is surprising, however, to find both dollar and pound sales of milk per cow to be so very little for the smaller farms. Dollar milk sales per cow from Economic Class VI farms were only one-fifth (21 percent) of those of Class I farms, while 29 percent as many pounds per cow were sold.

The sale of cream, accounting for 4 percent of all sales in only one economic class, does not explain much of the price difference. Most of it may be the result of the kind of markets available for the smaller farms. If a larger percentage of milk from small farms is used for manufactured products rather than for fluid consumption, it could well explain much of the discrepancy. No figures are currently available to confirm this surmise.

Fewer of the small farms used fertilizer or lime, and only 200 pounds were applied per acre compared with 260 pounds for the larger farms (Table 68). Information is not available to show whether the lower cost per ton on the smaller farms is the result of fertilizer of lower test. Lime costs were slightly higher on the small farms and the per acre application was less. Here again, there is no information to indicate the need for fertilizer and lime on farms of different size.

Are these dairy farms overpriced in terms of production or farm income? It has been mentioned that one method of obtaining a value for farm real estate is to ascertain the relation of total farm income to the value of the land and buildings. When judged by this relationship the dairy farms of this area are valued at about the average of dairy farms in other areas. The Economic Class I farms are valued at twice the yearly production. This ratio increases until it requires about 6 times the yearly production to equal the value of Economic Class VI farms.

Table 68.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for the Ozark-Springfield Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	23,017	39	516	1,962	5,182	8,988	6,330
Fertilizer:							
Percent of farms using	67	82	88	92	85	66	44
Tons used per farm reporting	4	31	14	8	5	3	2
Acres upon which used per farm reporting	37	230	120	73	42	24	16
Average per acre fertilized:							
Pounds	220	269	227	229	213	217	207
Cost, dollars	6.22	8.71	6.79	6.68	5.96	6.00	5.50
Lime:							
Percent of farms using	8	31	26	20	12	7	3
Acres upon which used per farm reporting	13	41	19	15	12	10	16
Average per acre limed:							
Pounds	3,956	3,820	4,522	4,027	3,952	4,170	2,826
Cost, dollars	5.83	5.34	6.69	5.30	6.06	6.36	4.40

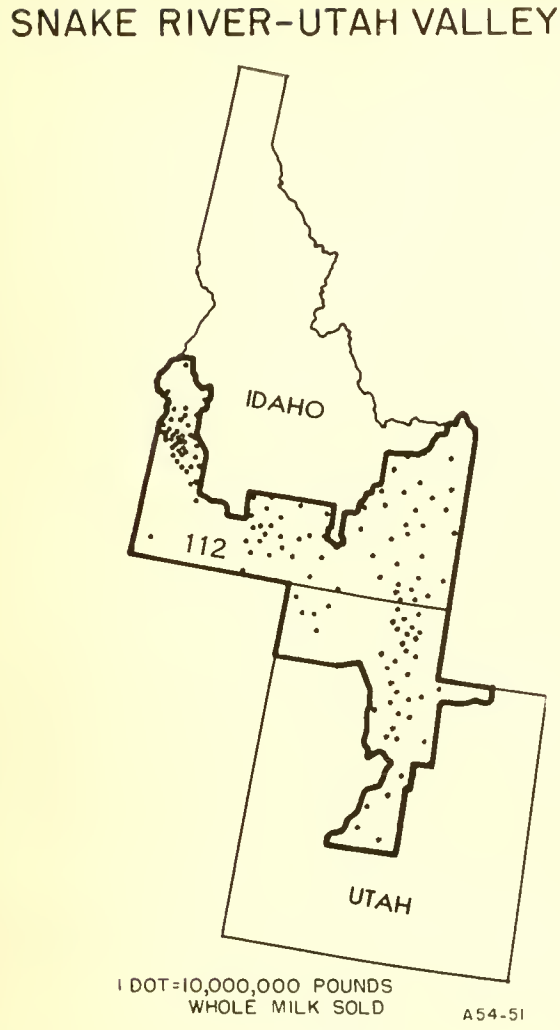

Figure 21.

THE SNAKE RIVER–UTAH VALLEY AREA
(Economic Subregion 112)

This intermountain subregion, with its mixture of intensive and extensive farming, brings together several areas of irrigated agriculture in the high valleys of southern Idaho and northern Utah and places where dryland farming is necessary. Farms in the irrigated valleys are relatively small, partly because of the method of developing the area and partly because large productions are obtained from irrigated crops and this supplies a good workload for the family. The nonirrigated lands have larger farms and a more extensive type of farming.

Most of the soils are waterlaid and show considerable variation within short distances in texture, depth, and drainage.[7] Usually the better, more productive soils are used for cultivated crops; the poorer soils are used for pastures. Practically all cropland and much pastureland is rather level, and, with the exception of a few farms in Morgan County and the Ogden Valley, both cropland and pastureland can be irrigated.

The average farm contains 345 acres. This includes 77 acres of harvested cropland with 26 acres of cropland reported as idle. Dairy farms are not so large as most other farms of the area. Although they constitute one-fourth of the number of farms, they occupy only 6 percent of the land in farms and control 9 percent of the total cropland.

Part-time, residential, and abnormal farms comprise one-fifth of the farms reported in the 1954 Census. Nearly 30 percent of the commercial farms produce field and cash crops. Another 25 percent are dairy farms. Nearly all farms are irrigated and most dairy farm concentrations are around the urban centers. Between 40 and 50 percent of the commercial farms in Summit and Wasatch Counties, east and southeast of Salt Lake City, are dairy farms.

The same proportion holds for Gem County, Idaho, while in Ada County, 54 percent are dairy farms. Approximately 21 percent of the dairy farms of the area are in these 4 counties.

Dairying throughout this area is carried on under various conditions. One is the high mountain valleys, as represented by Summit County, in which dairying competes largely with other types of livestock for the available forage. Cash crops are either limited or nonexistent. In most cases, beef cattle are the main competition for the feed with sheep being less competitive.

At the lower elevations dairying under some situations is only one of several important enterprises. On some occasions, wet bottomland or relatively unproductive soils suitable only for grazing are utilized, with the necessary winter feeds being in competition with cash crops such as sugar beets, potatoes, and canning vegetables. In nearly all situations dairying is associated with irrigated farms. Throughout most of this area some dryland crops, primarily wheat, are grown. Dairy cattle, however, are not important on these farms except as the same operator may have both dry-farm and irrigated farmland.[8]

The number of milk cows in the area has increased from 224,297 in 1949 to 250,363 in 1954. The number of dairy farms, was also increased by 476 or 6 percent and the average number of cows per herd has increased from 12 to 15. The range in the size of herd follows the pattern of other areas. Very few of the farms in Economic Class I have fewer than 30 milk cows. At the other extreme, very few of Class V or VI have more than 20 cows.

These dairy farms receive more than two-thirds of their income from the sale of dairy products and around one-seventh from sales of crops (Table 69). The proportion varies little from the largest to the smallest—the two extremes in size being the most highly specialized. No one economic class differs much from the average in its income from other livestock or crops. This holds also for the specified expenses (Table 70). Total feed purchases were low. The proportion of feed bought to total expenses showed greater variation than any other item. The largest farmers bought the smallest quantity of feed in proportion to all expenses; farmers of Economic Class VI bought the most.

[7] "Farm Management Study of farms with dairy enterprises in the Ogden Area, Utah." Geo. T. Blanch, Dee A. Broadbent, Bulletin 308. Utah Agricultural Experiment Station, Logan, Utah.

[8] Letter from G. T. Blanch, Head of Department of Agricultural Economics, Utah State College, Logan, Utah, Oct. 15, 1956.

Table 69.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Snake River-Utah Valley Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	8,459	108	766	2,235	2,819	2,010	521
Gross sales—							
Per farm—dollars	5,185	31,996	13,564	6,927	3,688	1,846	807
Per crop acre—do	85	146	117	94	63	60	36
Percent of gross sales from dairy products	69	74	70	67	66	72	76
Sales per farm:							
Milk—dollars	3,561	23,541	9,547	4,664	2,432	1,327	611
Cattle and calves—do	630	2,751	1,695	794	491	256	116
Hogs—do	55	300	93	78	48	25	5
Poultry products except eggs—dollars	24	25	121	21	14	8	3
Eggs—do	80	184	140	121	71	35	16
Sheep—do	20	48	38	33	13	10	5
Other livestock and livestock products—dollars	11	17	16	17	11	8	4
Total, livestock and livestock products—dollars	4,381	26,866	11,650	5,728	3,080	1,669	760
Field crops—do	712	4,269	1,664	1,058	561	157	44
Other crops [1]—do	92	861	250	141	47	20	3
Total crops—do	804	5,130	1,914	1,199	608	177	47

[1] Includes horticultural and forest products.

Table 70.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Snake River-Utah Valley Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	8,459	108	766	2,235	2,819	2,010	521
Average per farm:							
Machine hire—dollars	213	512	447	271	189	115	67
Hired labor—do	331	5,128	1,422	323	111	48	44
Feed—do	850	5,344	2,246	1,064	541	429	240
Gas and oil—do	325	1,346	717	419	277	145	92
Fertilizer—do	82	453	263	115	50	20	16
Lime—do	(Z)					(Z)	
Total—do	1,801	12,783	5,095	2,192	1,168	757	459
Average per crop acre:							
Machine hire—do							
Hired labor—do	5	23	12	4	2	2	2
Feed—do	14	24	19	14	9	14	11
Gas and oil—do	5	6	6	6	5	5	4
Fertilizer—do	1	2	2	2	1	1	1
Lime—do	(Z)					(Z)	
Total—do	25	55	39	26	17	22	18

Z Less than 0.50.

Measures of effectiveness in the use of resources show little change from the pattern of previously discussed subregions (Table 71). The total cropland per cow is larger than for most areas and the total investment per man-equivalent is higher than for most subregions. The same trend in resource use on smaller farms is as obvious here as in any subregion and the question of why this extreme drop-off occurs remains unanswered. The average price of milk is less on the smaller farms. This is probably due to smaller and lower paying markets. The sale of cream is rather negligible in any economic class, the highest being 3 percent of total milk income in Economic Class VI.

Table 71.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the Snake River-Utah Valley Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	8,459	108	766	2,235	2,819	2,010	521
Gross sales per farm—dollars	5,185	31,996	13,564	6,927	3,688	1,846	807
Specified expenses per farm—dollars	1,801	12,783	5,095	2,192	1,168	757	459
Gross sales less specified expenses per farm—dollars	3,384	19,213	8,469	4,735	2,520	1,089	348
Gross sales per man-equivalent	4,714	8,888	6,782	5,328	3,688	2,637	897
Total investment—							
Per farm—dollars	29,572	110,855	58,575	36,454	25,354	16,416	11,819
Per man-equivalent—do	26,884	30,793	29,288	28,042	25,354	23,451	14,774
Per $100 gross sales—do	569	346	431	528	685	912	1,477
Percent of sales of dairy products from cream	1	1	(Z)	(Z)	1	2	3
Milk sales per cow:							
Dollars	245	414	304	253	204	172	116
Pounds (milk equivalent)	7,218	7,560	8,012	7,651	6,800	6,148	4,177

Z Less than 0.5.

Approximately 10 percent of all whole milk is used for fluid consumption. The remaining 90 percent is used in making such products as cheese, evaporated milk, and butter. Factories are large and efficiently organized, and have the whole West Coast as a market. Because of their location the dairy farmers receive relatively satisfactory prices for their product. They apparently prefer getting the steady, regular prices for milk to raising high-priced crops that carry a high production risk. Many farmers produce both; this may help to explain why 48 percent of the milk cows are not on dairy farms.

Two-fifths of the farmers used some fertilizers (Table 72) but the rate of application was no higher than for most areas, even though it has been shown that well-fertilized, irrigated lands will produce phenomenal yields. A production of 6 tons of alfalfa per acre is common among the better farmers.

Table 72.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for the Snake River-Utah Valley Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	8,459	108	766	2,235	2,819	2,010	521
Fertilizer:							
Percent of farms using	38	77	68	53	34	19	20
Tons used per farm reporting	3	9	6	3	2	1	1
Cost of fertilizer per farm reporting—dollars	216	590	386	219	148	106	78
Acres upon which used per farm reporting	23	65	38	24	16	14	11
Average per acre fertilized:							
Pounds	280	277	321	267	266	215	256
Cost—dollars	9.22	9.13	10.20	9.09	8.96	7.74	6.83
Lime:							
Percent of farms using	(Z)					(Z)	
Tons used per farm reporting	1					1	
Cost of lime per farm reporting—dollars	6					6	
Cost per ton—do	6					6	
Average per acre limed:							
Pounds	333					333	
Cost—dollars	1.00					1.00	

Z Less than 0.5.

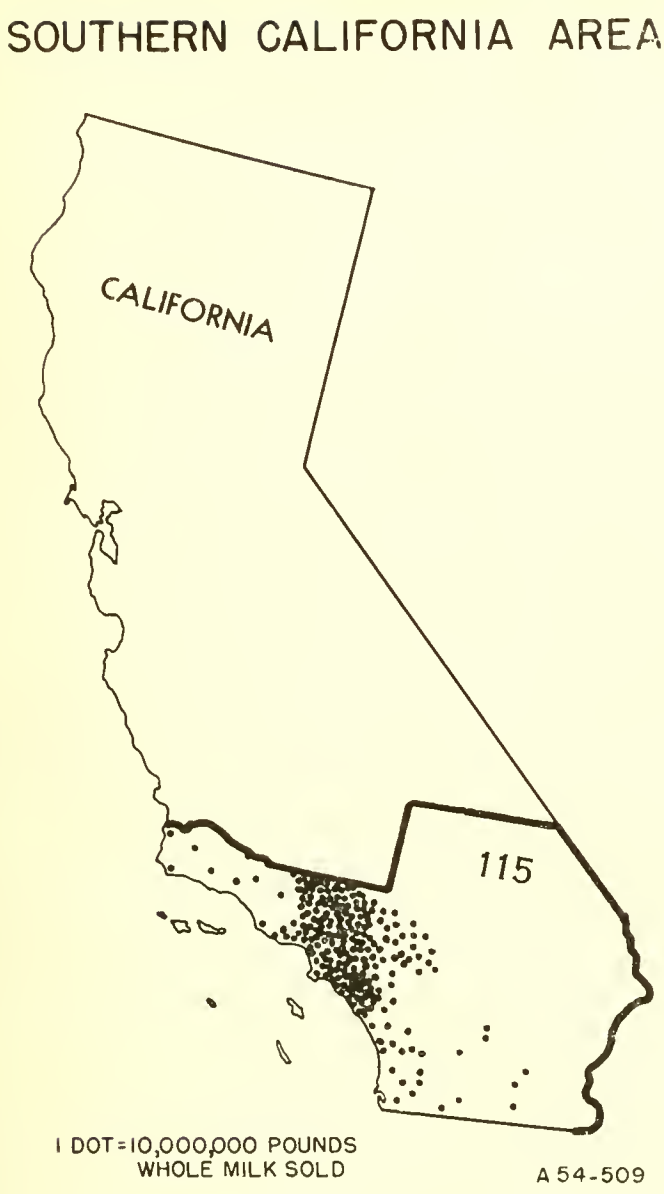

Figure 22.

THE SOUTHERN CALIFORNIA AREA
(Economic Subregion 115)

The West Coast probably has a more diversified pattern of agricultural production than any other agricultural section of the United States. Practically every type of farming is found here. Poultry, dairy, and other livestock farms compete with cash-grain, vegetable, and fruit farms for land, capital, and labor. Some of the most intensive systems of farming are found in the irrigated valleys where special crops are grown. General livestock farming and some ranching takes place where irrigation is not feasible or not practiced at the present time. Thirty percent of all farms are classed as special or noncommercial.

The Southern California Economic Subregion 115 is highly urbanized. This creates markets for many agricultural commodities. Agricultural production is limited to the coastal parts and the irrigated Imperial Valley. The Mojave Desert occupies most of the eastern part of the area.

The growing of citrus fruits is the prevailing agricultural activity and accounts for one-third of all farms, or 43 percent of the commercial farms. Poultry raising, vegetable growing, livestock, and general farming, each accounts for more farms than does dairying. These fruit and poultry farms are rather small, averaging less than 40 acres of cropland harvested. Dairy farms show an average of 32 acres. Where water is available 2 or more crops a year are grown on the land.

This subregion has a total of 34,537 farms. Only 23,847 are classed as commercial and 1,101 are dairy farms. One-fourth of the milk cows of the State are in this subregion, however, and they account for 30 percent of the milk output.

The dairy farms of Subregion 115 are unusual in that they show an average of more than 175 milk cows per farm. Slightly more than 97 percent of all milk cows are on these farms and they account for 99 percent of the milk sales, both in volume and value received. In 1950, only 91 percent of all milk cows of the subregion were on dairy farms. Figures do not show the percentage of milk sold from the dairy farms. But indications are that in 1949 these farmers sold a smaller portion of the total milk that reached the market than in 1954.

The immediate vicinity of Los Angeles has four-fifths of the dairy farms of the subregion and a slightly higher percentage of dairy cows. Most of the herds in this vicinity are very large, averaging between 200 and 300 cows. Dry-lot feeding is the common practice of these dairymen most of whom grow no crops. They depend on buying alfalfa hay of good quality for most of their feed. This hay is baled and trucked in from as far away as the San Joaquin Valley although most of it comes from irrigated fields in the Imperial Valley and the vicinity of Riverside. Relatively small quantities of grain are fed. During the last few years many of these dairymen have changed from the use of baled hay to soiling crops as the source of most of the feed. The crop, principally alfalfa, is cut one afternoon and trucked in to the milking herd that evening or early the next morning. The herd thus gets a more palatable feed and of a higher quality even though the baled hay has been excellent. A few farmers have their own hay fields which may be several miles from the milking herd. Their feeding practices are similar to those of farmers who buy their feed.

The usual milking life of cows in these dry-lot herds is 2 to 3 years and, in most instances, replacements are bought from farmers in other areas who either raise young animals for this purpose or have current surpluses from their milking herds. Many are shipped in even from as far away as southern Idaho. Weekly auctions provide a valuable source of replacement as well as an outlet for dry cows. They are usually located at the county seat towns. These auctions are established institutions which are of great service to both the buyer and the seller of milk cows. They are probably more useful in selling dry and cull cows than as a source of good milkers or fresh animals.

The labor force of these farms is more highly organized than in any other dairy area. The standard workload for the large herds is 60 cows per man with an extra man for every 5 or 6 men employed. This permits 1 day a week off for each regular milker. Practically all milking is by machine; 96 percent of all dairy farmers report the use of milking machines. All have electricity and practically all have piped running water and telephones.

Bulk handling of milk has been adopted by all the large producers as well as by many of the smaller dairymen. Some dealers are now requiring all producers to use the bulk method of handling milk. To buy a large bulk tank may add from $4,000 to $10,000 to the farmer's investment.

Some of these dairymen are organized on an enterprise basis. They have independent farming units for 2 or more of such operations as milking herd, fruit or vegetable growing, or more general farming activities such as raising alfalfa or other field crops. Any one of these activities can be disposed of without affecting the operation of others. For example, a farmer may decide to sell his milking herd of 250 cows and rent the buildings and equipment to another operator. He will still operate the fruit ranch and general farm. Later, he may again buy a milking herd and become a dairyman.

There were 2,987 farms in the area that had one or more milk cows;[9] 1,962 or 66 percent of these farms had fewer than 50 cows per herd and they sold only 1 percent of the milk within the area (Table 73). On the other hand, the 749 farms, or 25 percent, with 100 or more cows per farm sold 90 percent of the milk. The remaining 9 percent of sales of milk was from the 276 farms with 50 to 99 milk cows per farm. This illustrates the concentration both of milk cows and milk production within the area.

Table 73.—Number of Farms by Size of Herd and Milk and Cream Sold per Farm, for the Southern California Area: 1954

Size of herd (number of milk cows)	Number of farms	Milk cows per farm	Milk sold per farm (pounds, milk equivalent)	Cream sold per farm (pounds butterfat)	Percent distribution of milk sales
Total	2,987	68.0	730,394	33	100.0
1 to 19 milk cows	1,884	2.5	2,589	13	.2
20 to 49 milk cows	78	33.3	285,860	0	1.0
50 to 99 milk cows	276	74.8	731,417	102	9.3
100 or more milk cows	749	232.3	2,606,997	61	89.5

Table 74.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Southern California Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	1,101	974	54	43	20	10	
Gross sales—							
Per farm dollars	107,035	119,305	22,134	8,197	3,857	1,740	
Per crop acre do	1,630	1,751	357	275	83	48	
Percent of gross sales from dairy products	91	91	85	90	85	44	
Sales per farm:							
Milk dollars	97,351	108,506	18,884	7,390	3,284	761	
Cattle and calves do	7,782	8,630	2,071	721	560	907	
Hogs do	19	15	117				
Poultry products except eggs dollars	58	63	56		13		
Eggs do	162	181	36				
Sheep do	13	14					
Other livestock and livestock products dollars	6	6	18				
Total, livestock and livestock products dollars	105,391	117,505	21,182	8,111	3,857	1,668	
Field crops do	1,407	1,535	933	79			
Other crops[1] do	236	265	19	7		72	
Total crops do	1,643	1,800	952	86		72	

[1] Includes horticultural and forest products.

[9] 1,101 of these farms were dairy farms.

The unusual organization of the dairy farms in this area is further emphasized by a study of their income and expenses (Tables 74 and 75). Not only are these herds the largest in the United States but 89 percent of the farms are concentrated in Economic Class I. Gross sales of $107,000 per farm or $1,630 per acre of cropland and the extent of cropland or pastureland per cow show the basic differences between these farms and those other special areas.

Table 75.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Southern California Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	1,101	974	54	43	20	10	
Average per farm:							
Machine hire dollars	259	227	415	659	29	1,295	
Hired labor do	15,096	16,946	1,603	612	125	15	
Feed do	47,983	53,592	7,812	3,827	1,534	1,340	
Gas and oil do	987	1,053	824	217	229	315	
Fertilizer do	158	168	156	43			
Lime do	(Z)	(Z)					
Total do	64,483	71,986	10,810	5,358	1,917	2,965	
Average per crop acre:							
Machine hire do	4	3	7	22	1	36	
Hired labor do	230	249	26	20	3	(Z)	
Feed do	731	786	126	128	33	37	
Gas and oil do	15	15	13	7	5	9	
Fertilizer do	2	2	2	1			
Lime do	(Z)	(Z)					
Total do	982	1,055	174	178	42	82	

Z Less than 0.5.

Effieiency in the use of resources shows the same general relationship as that found in the other special areas even though the dairy farms are not typical by any ordinary standard (Table 76). The smaller the farm the less the returns in sales per acre of cropland, or per cow. Investment, though large, is less per cow or man-equivalent on the larger farms. Feed and labor costs are the outstanding items of expense on the larger farms, but the expense per cow looks reasonable enough—$270 per cow for feed and $85 for hired labor.

Table 76.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the Southern California Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	1,101	974	54	43	20	10	
Gross sales per farm dollars	107,035	119,305	22,134	8,197	3,857	1,740	
Specified expenses per farm dollars	64,483	71,986	10,810	5,358	1,917	2,965	
Gross sales less specified expenses per farm dollars	42,552	47,319	11,324	2,839	1,940	−1,225	
Gross sales per man-equivalent dollars	19,113	19,243	12,297	7,452	3,857	8,700	
Total investment—							
Per farm do	136,502	144,695	131,802	38,531	13,161	41,461	
Per man-equivalent do	24,375	23,720	73,223	32,109	10,968	103,652	
Per $100 gross sales do	128	121	596	470	337	2,439	
Percent of sales of dairy products from cream	(Z)	(Z)					
Milk sales per cow:							
Dollars	548	558	271	184	156	152	
Pounds (milk equivalent)	11,112	11,279	6,258	5,158	4,479	4,496	

Z Less than 0.5.

Net income, or gross sales less specified expenses, shows the importance of size or volume of business in creating savings. The relationship between size and net income is different from other dairy areas only in the amount rather than the direction. A range of more than $46,000 between the small and the large farms in this area makes any attempt at comparison worth little. And since there are few farms in any but Economic Class 1, this results in irregular relationships among the classes which would not occur if there were more farms in each class. Even so, what tendency there may be for the various efficiency factors to show a trend still supports the statement that small farms ordinarily cannot make as efficient use of the various inpnt items as large farms.

Only a small proportion of farms in this area use fertilizer. Farmers in Economic Classes I and II who did use fertilizer applied more than 400 pounds per acre (Table 77).

Table 77.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for the Southern California Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	1,101	974	54	43	20	10	------
Fertilizer:							
Percent of farms using	14	13	43	16	------	------	------
Tons used per farm reporting	18	22	4	3	------	------	------
Acres upon which used per farm reporting	80	89	50	19	------	------	------
Average per acre fertilized:							
Pounds	460	490	177	281	------	------	------
Cost dollars	13.64	14.29	7.29	13.60	------	------	------
Lime:							
Percent of farms using	(Z)	(Z)	------	------	------	------	------
Acres upon which used per farm reporting	17	17	------	------	------	------	------
Average per acre limed:							
Pounds	1,020	1,020	------	------	------	------	------
Cost dollars	3.39	3.39	------	------	------	------	------

Z 0.5 percent or less.

THE CALIFORNIA INNER VALLEY AREA
(Economic Subregion 116)

The California Inner Valley, consisting of the Sacramento and San Joaquin watersheds, has a varied agriculture. The two valleys have a variety of soils which vary in production from an intensive irrigated type of agriculture to the most extensive grazing operation.

In the San Joaquin Valley the more important soils are generally deep and permeable and neutral to slightly basic, so lime is not used much as a soil corrective. They are fertile, loamy soils with a topography well suited to irrigation. Annual rainfall is less than 10 inches so that all crop production must be under irrigation.

The more undulating to rolling part of the valley has surface soils that are usually sandy loams or gritty loams with clay loam or clay subsoils. They are used primarily for pasture and dry farming. They are not easily irrigated but where water is available and wisely managed they will grow grapes and deciduous and citrus fruits.

The Sacramento Valley has some soils like those of the San Joaquin Valley which are especially suited for general farming.

Figure 23.

Most of the better agricultural soils are found in the middle of the valley. They are heavily textured clays or clay loams that have been deposited by slow-moving streams. They are generally neutral to slightly acid with some lime in the deeper subsoils, and are subject to flooding unless protected by levees. Shallow, fibrous-rooted types of crops do better than such deep-rooted crops as vineyards or fruit trees.

As a result of the use of irrigation water this subregion has developed into one of the most important fruit and grape-growing areas of the United States. Dairying comes second in importance while such crops as sugar beets, vegetables, cottou and other special crops add to the variety of production. On lands not subject to irrigation general livestock farming and raneliing are still practiced.

In these two valleys are 52,000 farms and 10,000 are classed as noncommercial farms. Of the 42,000 commercial farms 21 percent are dairy farms. These dairy farms, 78 percent of which are in the San Joaquin Valley, help to supply the San Francisco metropolitan area with fluid milk.[10]

[10] Approximately two-thirds of the fluid-milk supply for the San Francisco metropolitan area is from Economic Subregion 116; the remaining one-third is from the northern part of Economic Subregion 117 for which no special presentation is made. This central coast area extending 300 miles from Sonoma and Napa Counties north of San Francisco and south to San Luis Obispo County is a small part of the San Francisco and San Jose metropolitan areas. Fruit, vegetable, and livestock farming account for most of the agricultural activity of the subregion, while the poultry industry accounts for 17 percent of all farms. Only 9 percent of the farms are dairy farms; most of these are in the northern part of the area near the consuming center. The ranches are in the rougher parts where all moisture for crop and grass growing is from seasonal rains.

Some dry-lot feeding is practiced here but most of the dairy farms raise some feed crops especially alfalfa and, because of the long growing season, irrigated pasture provides economical dairy feed. The usual practice is to raise the young stock for herd replacement although there is always some buying of young stock and cows outside the valley.

During 1950, 43 percent of the sales of whole milk was for fluid consumption. This had increased to 46 percent by 1954. These farms are second to those of the Southern California area in number of milk cows per farm, total income, and value of total assets. No other special dairy area approaches these two California areas in size of milking herds and in volume of business.

The organization of these farms follows more nearly the usual combination of enterprises than those of Southern California. More of them are found in the smaller size groups, Economic Classes II to IV, with a few even in Economic Class VI.

Average incomes are much smaller and the incomes of Economic Class I farms are less than half those of the Southern California Area. Nearly 10 percent of the total value of sales is from crops. Other livestock than dairy accounts for about 1 percent. Feed purchases and hired labor, as in other areas, are the two large items of specified farm expenses (Tables 78 and 79). The economic class array shows the common pattern of reduced returns on the smaller farms, and both per farm and per unit of production whether it be per cow, per acre, or per man (Tables 79 and 80). The choice and use of resources are not as effective on small dairy farms as on the larger ones.

Table 78.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the California Inner Valley Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	8,783	1,088	2,099	2,484	1,832	1,125	155
Gross sales—							
Per farm—dollars	13,814	56,723	15,574	7,097	3,797	1,953	917
Per crop acre—do	193	239	176	163	130	113	43
Percent of gross sales from dairy products	82	80	83	84	84	83	84
Sales per farm:							
Milk—dollars	11,308	45,464	12,946	5,996	3,190	1,621	774
Cattle and calves—do	1,118	4,033	1,290	678	408	241	116
Hogs—do	17	24	31	10	14	8	------
Poultry products except eggs—dollars	29	160	13	11	12	5	------
Eggs—do	88	392	102	25	29	17	4
Sheep—do	15	9	52	4	2	1	16
Other livestock and livestock products—dollars	4	4	8	2	2	(Z)	1
Total, livestock and livestock products—do	12,579	50,086	14,442	6,726	3,657	1,893	911
Field crops—do	1,065	6,087	905	255	90	30	2
Other crops [1]—do	170	550	227	116	50	30	4
Total crops—do	1,235	6,637	1,132	371	140	60	6

Z Less than 0.50.
[1] Includes horticultural and forest products.

Table 79.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the California Inner Valley Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	8,783	1,088	2,099	2,484	1,832	1,125	155
Average per farm:							
Machine hire—dollars	374	1,249	434	253	150	98	43
Hired labor—do	1,455	8,573	1,164	274	151	42	18
Feed—do	3,612	14,706	3,739	1,873	1,239	775	486
Gas and oil—do	559	1,867	657	371	223	144	66
Fertilizer—do	72	309	72	41	18	11	3
Lime—do	3	15	1	2	1	2	------
Total—do	6,075	26,719	6,067	2,814	1,782	1,072	616
Average per crop acre:							
Machine hire—do	5	5	5	6	5	6	2
Hired labor—do	20	36	13	6	5	2	1
Feed—do	50	62	42	43	42	45	23
Gas and oil—do	8	8	7	9	8	8	3
Fertilizer—do	1	1	1	1	1	1	(Z)
Lime—do	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	----
Total—do	84	112	68	65	61	62	29

Z Less than 0.50.

Table 80.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the California Inner Valley Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	8,783	1,088	2,099	2,484	1,832	1,125	155
Gross sales per farm—dollars	13,814	56,723	15,574	7,097	3,797	1,953	917
Specified expenses per farm—dollars	6,075	26,719	6,067	2,814	1,782	1,072	616
Gross sales less specified expenses per farm—dollars	7,739	30,004	9,507	4,283	2,015	881	301
Gross sales per man-equivalent	8,126	14,181	8,652	5,459	3,797	2,170	1,019
Total investment—							
Per farm—dollars	56,674	172,358	68,017	39,851	26,425	18,819	6,838
Per man-equivalent—do	33,338	43,090	37,787	30,655	26,425	23,524	7,598
Per $100 gross sales—do	411	304	436	561	695	941	760
Percent of sales of dairy products from cream	(Z)	(Z)	(Z)	(Z)	1	1	1
Milk sales per cow:							
Dollars	273	348	256	215	181	148	98
Pounds (milk equivalent)	7,643	8,729	7,643	6,836	5,852	4,776	3,185

Z 0.5 percent or less.

Fewer farmers report the use of commercial fertilizers than in any other special area, and those who use it apply fewer pounds per acre (Table 81). The price would suggest a fertilizer of higher test than is used in some areas. Practically no lime is used on these dairy farms.

Table 81.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for the California Inner Valley Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	8,783	1,088	2,099	2,484	1,832	1,125	155
Fertilizer:							
Percent of farms using	22	42	27	21	16	8	3
Tons used per farm reporting	6	14	5	3	2	3	2
Acres upon which used per farm reporting	40	89	34	22	16	16	19
Average per acre fertilized:							
Pounds	314	326	302	315	256	343	253
Cost—dollars	8.22	8.31	7.91	8.76	7.11	8.98	4.47
Lime:							
Percent of farms using	1	3	1	1	1	1	------
Acres upon which used per farm reporting	28	52	16	20	8	17	------
Average per acre limed:							
Pounds	2,251	2,330	1,021	2,861	1,576	2,353	------
Cost—dollars	9.32	9.26	4.83	9.71	8.70	15.82	------

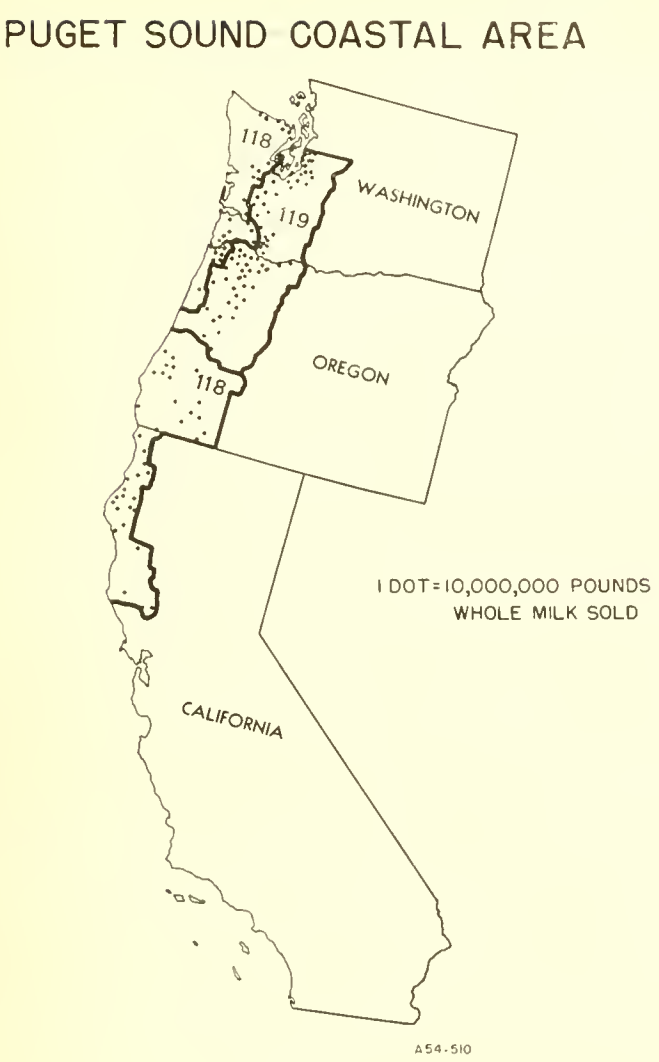

Figure 24

THE PUGET SOUND–COASTAL AREA
(Economic Subregions 118 and 119)

Most of the agricultural production of this area is on the alluvial plains between the mountains and the ocean, and in the river and mountain valleys. The whole area may be characterized as rolling to mountainous. The plow lands are on the less rolling areas and the pasture lands spread to and into the more rugged parts. The western third of Washington and Oregon are included and Economic Subregion 118 extends down the coast of northwestern California to Sonoma and Napa Counties. Practically the whole of the two economic subregions is conditioned climatologically by the Pacific Ocean. Summers are not so hot or the winters so cold as in areas to the east. The cool climate with a long growing season (160 to 240 days) and plentiful rainfall produce good grass growth and a generally good environment for dairying, even though the rainfall is not evenly distributed throughout the summer.

Both economic subregions show considerable diversification and the proportion of the several types of farms is different in different parts of the elongated area. In Washington, poultry farms are second in number to dairy farms. These are followed by fruit and general farms. In the Oregon part the number of fruit-and-nut farms exceeds any other type. Dairy, general, other livestock, and cash-crop farms follow in the order listed, while in northwestern California the number of general farms practically equals that of the dairy farms with fruit-and-nut farms third. In every part of the two economic subregions the number of noncommercial farms exceeds the total of all others.

Most of the milk sales are of whole milk. The milk equivalent of cream sales is only 6.4 percent in the Washington part. This proportion drops to 5.2 percent in Oregon, and in northwestern California the quantity sold drops to around 4.3 percent.

The quantity of whole milk used in manufacturing dairy products is greatest in the California part where 78 percent [11] of the milk sold is so used in comparison with 38 percent for all of California. This part of the area is fairly isolated from fluid-milk markets. It is mainly forest land with some open spaces available for crops and grazing near the mouths of rivers along the coast. The soil here is fertile and grazing conditions are excellent. Dairying has been an established enterprise for decades but because of its inaccessibility to fluid milk markets the milk has gone into such products as cheese, butter, and powdered milk.

The Willamette Valley in western Oregon fairly well characterizes Economic Subregions 118 and 119 within that State. It is somewhat similar to the San Joaquin Valley, except that it has more rainfall as well as more irrigated pasture land. It is more a specialized dairy area and is fairly commercialized. Bulk handling of milk is now the accepted practice throughout this part of the two economic subregions.

Outlets for fluid milk are better in this part than in northwestern California so that less of the whole milk is used in manufactured products. The figures for the State show that 60 percent of the milk sold as whole milk and cream was used in manufactured dairy products, in 1954. That part of the State included in Economic Subregions 118 and 119 sold 94.8 percent of all milk as whole milk and 67 percent of this was used in manufactured products. Butter sales account for two-fifths of the amount, while the sale of cheese accounts for three-fifths.

The part of the two subregions that supplies the Puget Sound metropolitan area with dairy products includes 14 counties lying north of the south tier of counties in Washington.[12] In 1950 this area represented 14 percent of the farmland of the State and 50 percent of all farms, 28 percent of the value of all farm products, and 68 percent of all dairy products were sold from it. The metropolitan district takes the total production of the area except in the flush season.

The northern counties originally developed as a dairy manufacturing territory. The manufacture of butter, cheese, and milk powder were the chief outlets for milk. With the increase in urban population, and especially since bulk handling developed, most of the production now goes to help supply the fluid-milk market of Seattle and other nearby cities.

Not so much of the milk in this part is used in manufactured dairy products as in the other two parts. Nearly 50 percent of the whole milk and cream sold from farms in the State in 1954, was used in manufactured dairy products. In the Washington part of this area 93.6 percent of the milk was sold as whole milk and 55.2 percent of this quantity was used in manufactured products. The sales of cream for the two entire economic subregions was 3.8 percent of all milk sales.

[11] See Manufactured Dairy Products, Milk Production, Utilization and Prices. Special Publication No. 256, California Department of Agriculture, Sacramento, Calif.
[12] The county of Kittitas east of the Cascades also supplies the equivalent of 31 million pounds of milk to the urban district.

The general organization of these farms shows little variation from those previously discussed (Tables 82, 83, and 84). Income per farm is relatively high and income per crop acre is better than the usual income of the special dairy areas. Milk income per cow, as well as the quantity of milk sold per cow, is lower than in other areas of the west coast. A study of these farms grouped by economic class repeats the story of other areas. The smaller the farm the less the operator receives for the use of resources. Operators of small farms apparently must accept small incomes and only a few of the amenities of living if they depend altogether on the farms for their incomes.

Table 82.—Sources of Farm Income on Dairy Farms, by Economic Class of Farm, for the Puget Sound-Coastal Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	12,321	372	2,576	3,252	2,564	2,567	990
Gross sales:							
Per farm—dollars	7,273	36,356	14,549	7,339	3,600	1,843	785
Per crop acre—do	133	186	165	137	85	63	46
Percent of gross sales from dairy products	91	84	87	87	79	74	75
Sales per farm:							
Milk—dollars	6,167	30,589	12,616	6,358	2,856	1,373	585
Cattle and calves—do	548	2,890	886	504	387	255	102
Hogs—do	29	47	49	18	33	22	8
Poultry products except eggs—dollars	21	18	40	21	18	12	4
Eggs—do	119	231	172	156	101	54	29
Sheep—do	15	83	16	20	7	10	2
Other livestock and livestock products—dollars	9	45	12	7	7	7	3
Total, livestock and livestock products—dollars	6,908	33,903	13,791	7,084	3,409	1,733	733
Field crops—do	167	1,210	321	111	109	45	18
Other crops [1]—do	131	850	317	80	40	38	17
Total crops—do	298	2,060	638	191	149	83	35

[1] Includes horticultural and forest products.

Table 83.—Specified Farm Expenditures on Dairy Farms, by Economic Class of Farm, for the Puget Sound-Coastal Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	12,321	372	2,576	3,252	2,564	2,567	990
Average per farm:							
Machine hire—dollars	145	411	245	149	113	76	35
Hired labor—do	543	5,804	1,122	312	138	93	33
Feed—do	2,086	8,148	4,017	2,226	1,173	660	406
Gas and oil—do	285	1,146	501	288	203	111	60
Fertilizer—do	114	486	247	102	64	28	9
Lime—do	17	71	35	14	9	7	2
Total—do	3,190	16,066	6,167	3,091	1,700	975	545
Average per crop acre:							
Machine hire—do	3	2	3	3	3	3	2
Hired labor—do	10	30	13	6	3	3	2
Feed—do	38	42	45	41	28	23	24
Gas and oil—do	5	6	6	5	5	4	4
Fertilizer—do	2	2	3	2	2	1	1
Lime—do	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Total—do	58	82	70	57	41	34	33

Z Less than 0.50.

Table 84.—Measures of Income and Efficiency Levels for Dairy Farms, by Economic Class of Farm, for the Puget Sound-Coastal Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	12,321	372	2,576	3,252	2,564	2,567	990
Gross sales per farm—dollars	7,273	36,356	14,549	7,339	3,600	1,843	785
Specified expenses per farm—do	3,190	16,066	6,167	3,091	1,700	975	545
Gross sales less specified expenses per farm—dollars	4,083	20,290	8,382	4,248	1,900	868	240
Gross sales per man-equivalent	5,595	10,093	8,079	5,444	3,325	2,137	903
Total investment per farm—dollars	34,797	112,839	57,655	34,443	25,835	20,111	13,796
Per man-equivalent—do	26,767	31,344	32,031	24,602	23,486	22,346	15,329
Per $100 gross sales—do	477	310	398	472	718	1,117	1,724
Percent of sales of dairy products from cream	.02	(Z)	.01	01	.04	.08	.16
Milk sales per cow:							
Dollars	288	377	333	281	202	165	126
Pounds (milk equivalent)	7,031	8,271	7,668	7,076	5,617	5,249	4,144

Z Less than 0.5.

The number of farmers using fertilizers compares favorably with the Inner Valley of California, but the quantity applied per acre is less (Table 85). The rate of application on the treated land bears little relation to size or economic class, in the use of either fertilizer or lime.

Table 85.—Use of Fertilizer and Lime on Dairy Farms, by Economic Class of Farm, for the Puget Sound-Coastal Area: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	12,321	372	2,576	3,252	2,564	2,567	990
Fertilizer:							
Percent of farms using	44	59	61	52	37	31	15
Tons used per farm reporting	4	13	6	3	3	1	1
Acres upon which used per farm reporting	29	106	43	23	19	11	9
Average per acre fertilized:							
Pounds	262	237	273	255	275	253	244
Cost—dollars	8.85	8.85	9.32	8.62	9.53	8.22	6.57
Lime:							
Percent of farms using	8	22	13	10	6	5	3
Acres upon which used per farm reporting	15	29	17	13	11	11	4
Average per acre limed:							
Pounds	2,700	2,380	3,100	2,460	2,460	2,620	2,480
Cost—dollars	13.27	11.20	16.03	10.92	12.79	13.38	14.24

APPENDIX

DAIRY PRODUCTS AND PRICE SUPPORTS

The purchase and removal of dairy products from regular market channels under the program to support prices to producers for milk and butterfat have been in process since early 1949. During 1949 the program was carried out under the Agricultural Act of 1948 which required the support of prices to producers for milk and butterfat at 90 percent of parity.

The authority for the current program is the Agricultural Act of 1949 as amended. Title II, Section 201 of the amended Act provides that "The Secretary is authorized and directed to make available * * * price support to producers for * * * tung nuts, honey, milk, butterfat, and the products of milk and butterfat. The price of whole milk, butterfat, and the products of such commodities, respectively, shall be supported at such level not in excess of 90 per centum nor less than 75 per centum of the parity price therefore as the Secretary determines necessary in order to assure an adequate supply. Such price support shall be provided through loans on, or purchase of, milk and the products of milk and butterfat, and for the period ending March 31, 1956, surplus stocks of dairy products owned by the Commodity Credit Corporation may be disposed of by any methods determined necessary by the Secretary."

Dairy products acquired under the program have been offered for sale in domestic and export outlets to the extent possible without impairing the support program. In addition, Section 416 of the 1949 act, as amended, provides that "in order to prevent waste of commodities acquired through price-support operations by the Commodity Credit Corporation before they can be disposed of in normal domestic channels without impairment of the price-support program or sold abroad at competitive world prices, the Commodity Credit Corporation is authorized, on such terms and under such regulations as the Secretary may deem in the public interest: (*1*) to make such commodities available to any Federal Agency for use in making payment for commodities not produced in the United States; (*2*) to barter or exchange such commodities for strategic or other materials so authorized by law; (*3*) in the case of food commodities to donate such commodities to the Bureau of Indian Affairs and to such State, Federal, or private agency or agencies as may be designated by the proper State or Federal authority and approved by the Secretary, for use in the United States in nonprofit school-lunch programs, in the assistance of needy persons, and in charitable institutions, including hospitals, to the extent that needy persons are served; and (*4*) to donate any such food commodities in excess of anticipated disposition under (*1*), (*2*), and (*3*) above to nonprofit voluntary agencies registered with the Committee on Voluntary Foreign Aid of the Administration or other appropriate Department or agency of the Federal Government and intergovernmental organizations for use in the assistance of needy persons outside the United States." Section 202 of the Act also provides for the Commodity Credit Corporation to donate dairy products to hospitals of the Veterans' Administration and to military agencies for their increased use over and above the normal market purchases.

Total dairy products purchased under the program since early 1949 through March 31, 1956, were equivalent to 32,852,000,000 pounds of milk (Table 1). The amounts purchased each year ranged about one hundredth of one percent of the total milk production for the marketing year ending March 31, 1952, to 10 percent in 1953–54. The average yearly purchase was less than 4 percent of the average yearly production. Total quantities purchased to this date approximate one-fourth of the total milk production for 1 year.

Table 1.—Milk Production and Price Support Purchases, by Program Years: 1949 to 1956

Marketing year beginning Apr. 1 except as noted	Milk production	Purchases in million pounds				Total purchases in milk equivalent as percent of total production
		Butter	Cheddar cheese	Nonfat dry milk	Milk equivalent [1]	
	Million pounds					*Percent*
1949 [2]	116,103	114.3	25.5	325.5	2,541	2.2
1950–51 [3]	142,465	127.9	108.9	352.7	3,647	2.6
1951–52	114,714	.2	.8	52.6	12	(Z)
1952–53	117,050	143.3	75.2	210.4	3,618	3.1
1953–54	121,761	380.2	456.0	665.9	12,164	9.9
1954–55	121,673	210.5	153.4	523.2	5,744	4.7
1955–56	125,180	177.6	157.4	623.7	5,126	4.1

Z Less than 0.5.

[1] Milk equivalent of butter and cheese purchases, fat solids basis (butter X20 and cheese X10). Milk equivalent of nonfat dry milk not included to avoid duplication with butter.

[2] Calendar year.

[3] Data are for 15 months, Jan. 1950 to Mar. 31, 1951.

The total cost of these commodities consists of two items—the purchase price and the carrying charges. The yearly total cost varied from 9 million dollars for the marketing year ending March 31, 1952, to 453 million dollars in 1954 (Table 2). Practially one-half of the total cost over the 7 years was for butter bought while the remaining costs were fairly evenly divided between the purchases of cheese and nonfat dry milk.

Table 2.—Cost of Dairy Products Acquired Under Price Supports Programs, by Years: Jan. 1, 1949, to Mar. 31, 1956

Item and period	Total purchases	Carrying charges	Total cost
By years:	*Dollars*	*Dollars*	*Dollars*
Jan. 1, 1949, to Dec. 31, 1949	116,795,546.53	7,421,511.68	124,217,058.21
Jan. 1, 1950, to Mar. 31, 1951	153,158,486.38	8,894,345.79	162,052,832.17
Apr. 1, 1951, to Mar. 31, 1952	8,304,187.03	792,740.54	9,096,927.57
Apr. 1, 1952, to Mar. 31, 1953	110,051,769.36	1,337,474.97	111,389,244.33
Apr. 1, 1953, to Mar. 31, 1954	432,697,611.01	19,983,351.45	452,680,962.46
Apr. 1, 1954, to Mar. 31, 1955	387,416,992.22	42,259,575.29	429,676,567.51
Apr. 1, 1955, to Mar. 31, 1956	201,817,946.86	45,353,343.94	247,171,290.80
Total	1,410,242,539.39	126,042,343.66	1,536,284,883.05
By product purchased (total, Jan. 1, 1949, to Mar. 31, 1956):			
Butter	707,546,704.64	50,175,152.66	757,721,857.30
Cheese	343,746,370.94	37,520,211.58	381,266,582.52
Nonfat dry milk	352,809,065.51	37,859,015.35	390,668,080.86
Whey	6,140,398.30	487,964.07	6,628,362.37
Total	1,410,242,539.39	126,042,343.66	1,536,284,883.05

It is a comparatively simple procedure to buy 3 or 4 percent of the dairy products of any 1 year. Its utilization in such a way as not to interfere with the regular flow to market of the remaining 96 or 97 percent of the products creates a problem with no simple solution.

Only limited quantities can usually be sold back to the domestic market or for commercial export without impairing the current support program or seriously depressing foreign markets. Donations or sales at low prices for domestic school lunch and welfare uses, for foreign welfare uses, and for increased military use have been the major outlets for dairy products acquired under the support program.

The various dairy products differed considerably in rate of utilization through the different outlets. For example, whereas only 17.7 percent of all butter bought was moved through commercial sales channels, 24.9 percent of all cheese was so disposed of and 31.8 percent of nonfat dry milk (Table 3). Noncommercial sales of butter also were relatively small compared to the movement of cheese and nonfat dry milk. On the other hand donations of butter to both domestic and foreign recipients accounted for more than one-half of all purchases. The same holds for cheese, whereas only slightly more than one-third of all nonfat dry milk was so disposed of.

It is not surprising, rather it is to be expected, that transactions involving the movement of surplus products will show financial losses. The purchase of surplus products presupposes supplies in excess of the amounts the market will absorb at specified or given prices. And unless some production calamity overtakes the industry or special markets (and prices) develop because of some other type of calamity, such as war, these products ultimately must be moved into consumption channels at lower prices than those at which the commodities were taken off the market.

Table 3.—Method of Disposition of Dairy Products Bought: Jan. 1, 1949, to Mar. 31, 1956

Method of disposition	Butter	Cheese	Nonfat dry milk solids
	Percent	*Percent*	*Percent*
Total	100.0	100.0	100.0
Commercial sales	17.7	24.9	31.8
Noncommercial sales	4.1	11.5	29.1
Transfers to other agencies	21.7	8.7	3.2
Donations	56.5	54.9	35.9

The losses experienced in the sale of purchased dairy products were the lowest in 1951–52, the first full year of the "Koreau Incident" (Table 4). The year of the largest loss was following the end of the "Korean Incident" when demand for the greater supplies dropped and market adjustments for producers were most severe. The total losses in handling surplus dairy products to the equivalent of nearly 33 billion pounds of milk amount to slightly more than 25 cents per hundredweight, or about 1 cent per hundredweight of milk produced.

Table 4.—Method of Disposition of Supplies Bought, by Kind of Dairy Product, By Calendar Years: 1949 to 1956

Method of disposition	1949	1950	1951	1952	1953	1954	1955	1956	Total [1]	1949-56 percent distribution
	Butter (million pounds)									
Commercial domestic sales	2.6	113.3	26.8		3.7	21.4	2.7	0.9	171.4	14.9
Salvage					.3				.3	
Commercial sales exports						1.7	14.7	12.1	28.5	2.5
Noncommercial exports		5.5				11.4	26.6		43.5	3.8
Transfer to International Cooperation Administration						9.1	3.6	2.3	15.0	1.3
Transfer to sec. 32	15.0	4.2			71.0	36.0		37.1	163.3	14.1
Transfer to U. S. Army					15.1	29.7	41.4	5.6	91.8	7.9
Transfer to Veterans' Administration						.9	2.7	.7	4.3	.4
Donations—sec. 416, Domestic		36.4				77.2	95.1	1.4	210.1	18.2
Foreign		37.9			28.1	130.5	178.9	50.3	425.7	36.9
Total	17.6	197.3	26.8		118.2	317.9	365.7	110.4	1,153.9	100.0
	Cheddar cheese (million pounds)									
Commercial domestic sales		25.7	7.9	1.1	5.3	119.9	8.7	0.6	169.2	22.6
Exports						.3	4.0	3.7	8.0	1.1
Noncommercial exports		71.9	.8		.5		6.8		80.0	10.7
Transfer to International Cooperation Administration						4.1	16.0		20.1	2.6
Sec. 32					17.4	19.7		29.4	66.5	8.9
U. S. Army						1.3	2.2	.4	3.9	.5
Donations—sec. 416, Domestic		20.5				58.0	71.3		149.8	20.0
Foreign		8.5			14.3	78.9	118.0	32.1	251.8	33.6
Total		126.6	8.7	1.1	37.5	282.2	227.0	66.2	749.3	100.0
Unsold supplies, Mar. 31, 1956								228.2		
	Nonfat dry milk (million pounds)									
Commercial domestic sales		30.8	31.5	19.5	0.1	4.4	1.3	0.4	88.0	3.2
Animal feed		10.0	17.5	7.4	2.5	578.3	15.6	6.4	637.7	23.6
Exports		2.7	5.9			2.2	89.0	25.2	125.0	4.6
Noncommercial exports	140.8	187.1	83.5	20.2	99.2	142.9	75.3		749.0	27.7
Transfer to International Cooperation Administration						11.6	15.5		27.1	1.0
Sec. 32	15.4	4.0	1.4	9.5	7.5	4.2		29.0	71.0	2.6
U. S. Army				5.9	6.8	.1	.3	.1	13.2	.5
Donations—sec. 416, Domestic		12.4	11.0			56.5	71.3		151.2	5.6
Foreign		71.2	54.6		79.9	186.3	365.3	88.5	845.8	31.2
Research					.1		.1		.2	
Foreign Agriculture Service							.1		.1	
Total	156.2	318.2	205.4	62.5	196.1	986.5	633.8	149.6	2,708.3	100.0
Unsold supplies, Mar. 31, 1956								46.4		

[1] The difference between the total quantities purchased and the total quantities disposed of after making allowance for stocks in inventory, may be attributed primarily to the fact that purchase contracts provide for a 2 percent tolerance with the result that the quantities delivered to the C. C. C. may be somewhat more or less than the contracted quantities.

Table 5.—Losses of Commodity Credit Corporation Through Market Operations, by Kind of Dairy Product, by Program Years: 1949 to 1956

Program year [1]	Butter	Cheese	Milk	Whey	Fluid milk	Total losses
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1949	34, 275, 417. 02	5, 132, 692. 48	29, 072, 061. 02			68, 480, 170. 52
1950–51	14, 032, 445. 53	19, 884, 725. 87	29, 342, 176. 06			63, 259, 347. 46
1951–52	[2] 8, 021. 51	[2] 11, 089. 84	764, 099. 47			744, 988. 12
1952–53	52, 316, 599. 05	19, 164, 608. 03	30, 827, 953. 20			102, 309, 160. 28
1953–54	198, 183, 219. 45	88, 587, 290. 04	94, 320, 010. 14			381, 090, 519. 63
1954–55	70, 797, 421. 09	20, 054, 670. 04	82, 003, 405. 06	3, 169, 478. 53	34, 585, 832. 50	210, 610, 807. 22
1955–56	16, 698, 323. 79	467, 690. 13	36, 421, 754. 61		11, 122, 578. 61	64, 710, 347. 14
Total	386, 295, 404. 42	153, 280, 686. 75	302, 751, 459. 56	3, 169, 478. 53	45, 708, 411. 11	891, 205, 340. 37

[1] Calendar year for 1949 and marketing year ending Mar. 31 for other years.
[2] Gain.

Table 6.—Percent Distribution of Dairy Farms in Each Economic Class of Farm Group, by Number of Milk Cows, for Major Dairy Regions: 1954

Major dairy region and number of milk cows per farm	Percent distribution for each economic class of farm						
	Total	I	II	III	IV	V	VI
Northeastern Dairy Region							
Farms with—							
Under 5 cows	2			(Z)	1	5	32
5 to 9 cows	9		(Z)	1	10	44	45
10 to 14 cows	16	(Z)	1	6	32	34	13
15 to 19 cows	19	1	2	20	32	12	6
20 to 29 cows	29	5	21	48	23	4	4
30 to 49 cows	20	15	57	23	2	1	1
50 to 99 cows	6	58	19	1	(Z)		
100 cows and over	(Z)	21	(Z)				
Total	100	100	100	100	100	100	100
Eastern Ohio-Western Pennsylvania Dairy Region							
Farms with—							
Under 5 cows	6		(Z)	(Z)	1	7	40
5 to 9 cows	22		(Z)	3	22	56	51
10 to 14 cows	28	2	3	23	47	29	7
15 to 19 cows	20	6	12	35	22	6	1
20 to 29 cows	18	4	43	34	8	1	(Z)
30 to 49 cows	6	34	38	4	1	(Z)	
50 to 99 cows	1	46	4	(Z)	(Z)		
100 cows and over	(Z)	9					
Total	100	100	100	100	100	100	100
Central Michigan-New York Lake Shore Dairy Region							
Farms with—							
Under 5 cows	4	1	(Z)	(Z)	1	9	42
5 to 9 cows	19		1	3	25	61	50
10 to 14 cows	24	4	2	23	46	26	6
15 to 19 cows	19	4	9	33	20	4	1
20 to 29 cows	21	5	37	35	7	1	(Z)
30 to 49 cows	11	31	44	6	1		
50 to 99 cows	2	46	7	(Z)			
100 cows and over	(Z)	11	(Z)				
Total	100	100	100	100	100	100	100
Northern Lake Dairy Region							
Farms with—							
Under 5 cows	2		(Z)	(Z)	(Z)	4	30
5 to 9 cows	13		(Z)	1	9	43	55
10 to 14 cows	24	4	2	8	37	41	13
15 to 19 cows	25	5	5	28	37	10	2
20 to 29 cows	27	1	38	52	17	2	1
30 to 49 cows	8	20	47	11	1	(Z)	(Z)
50 to 99 cows	1	56	7	(Z)	(Z)		
100 cows and over	(Z)	14	(Z)				
Total	100	100	100	100	100	100	100
Northern Woods Dairy Region							
Farms with—							
Under 5 cows	6		1	1	1	4	30
5 to 9 cows	30		3	2	9	46	59
10 to 14 cows	32		3	11	42	40	9
15 to 19 cows	18		18	27	33	9	1
20 to 29 cows	12	16	35	48	14	1	1
30 to 49 cows	2	47	29	12	1	(Z)	
50 to 99 cows	(Z)	34	10	(Z)			
100 cows and over	(Z)	3	1				
Total	100	100	100	100	100	100	100

Z Less than 0.5 percent.

Table 7.—Percent Distribution of Dairy Farms in Each Economic Class of Farm Group, by Number of Milk Cows, for Special Dairy Areas: 1954

Special dairy area and number of milk cows per farm	Percent distribution for each economic class of farm						
	Total	I	II	III	IV	V	VI
Subregion 54							
Farms with—							
Under 5 cows	9		2		1	3	30
5 to 9 cows	31			3	5	41	57
10 to 14 cows	25			3	30	42	10
15 to 19 cows	12			14	28	9	2
20 to 29 cows	13		14	42	28	5	1
30 to 49 cows	8	14	53	33	8		
50 to 99 cows	2	43	29	5	(Z)		
100 cows and over	(Z)	43	2	(Z)			
Total	100	100	100	100	100	100	100
Subregion 58							
Farms with—							
Under 5 cows	1				1	2	10
5 to 9 cows	3				1	21	40
10 to 14 cows	5			3	6	15	30
15 to 19 cows	15			5	31	29	
20 to 29 cows	30		13	34	37	25	20
30 to 49 cows	34		41	51	22	8	
50 to 99 cows	11	55	44	8	2		
100 cows and over	1	45	2				
Total	100	100	100	100	100	100	100
Subregions 73 and 82							
Farms with—							
Under 5 cows	10	13		1	2	5	29
5 to 9 cows	35		1	2	12	43	54
10 to 14 cows	28		3	12	39	35	14
15 to 19 cows	13		11	22	26	13	2
20 to 29 cows	10	13	26	42	19	4	1
30 to 49 cows	3	15	41	19	2	(Z)	(Z)
50 to 99 cows	1	41	16	2	(Z)		
100 cows and over	(Z)	18	2				
Total	100	100	100	100	100	100	100
Subregion 112							
Farms with—							
Under 5 cows	6				1	10	45
5 to 9 cows	30			4	31	67	47
10 to 14 cows	27	5	4	24	46	19	7
15 to 19 cows	15		9	33	15	3	
20 to 29 cows	14	15	37	32	6	1	1
30 to 49 cows	6	16	40	7	1	(Z)	
50 to 99 cows	2	53	9	(Z)			
100 cows and over	(Z)	12					
Total	100	100	100	100	100	100	100
Subregion 115							
Farms with—							
Under 5 cows	(Z)					50	
5 to 9 cows	(Z)					50	
10 to 14 cows	1		1		25		
15 to 19 cows	1			23	25		
20 to 29 cows	4		19	37	50		
30 to 49 cows	3	2	19				
50 to 99 cows	24	22	54	40			
100 cows and over	67	76	7				
Total	100	100	100	100	100	100	
Subregion 116							
Farms with—							
Under 5 cows	3		(Z)	1	4	7	29
5 to 9 cows	8			1	7	40	45
10 to 14 cows	12		(Z)	5	28	34	13
15 to 19 cows	10		(Z)	11	25	12	3
20 to 29 cows	18		7	37	27	4	10
30 to 49 cows	24	4	43	41	7	1	
50 to 99 cows	18	45	46	4	1	1	
100 cows and over	7	51	2	(Z)			
Total	100	100	100	100	100	100	100
Subregions 118 and 119							
Farms with—							
Under 5 cows	9	4	1	1	3	13	58
5 to 9 cows	19		(Z)	2	19	56	37
10 to 14 cows	16		(Z)	9	40	24	4
15 to 19 cows	12	1	4	22	21	4	1
20 to 29 cows	21	3	22	49	14	2	
30 to 49 cows	17	15	55	16	3	1	1
50 to 99 cows	5	55	16	(Z)	(Z)		
100 cows and over	1	22	1	(Z)			
Total	100	100	100	100	100	100	100

Z Less than 0.5 percent.

Table 8.—Measure of Size of Business for Dairy Farms, by Economic Class of Farm, for Major Dairy Regions: 1954

Major dairy region and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Northeastern Dairy Region							
Number of farms	67,521	1,215	12,525	24,658	19,447	7,965	1,711
Average per farm:							
All land in farms—acres	218	565	323	222	167	131	115
Cropland harvested—do	70	197	110	72	51	35	27
Total investment—dollars	23,348	80,128	37,759	23,399	16,383	12,625	9,347
Land and buildings—do	13,781	51,435	22,342	13,731	9,530	7,662	6,035
Machinery and equipment—do	4,889	13,915	7,674	4,862	3,647	2,780	1,757
Livestock—do	4,678	14,778	7,743	4,806	3,206	2,183	1,555
Man-equivalent of labor	1.5	5.3	2.2	1.5	1.1	0.9	0.9
Number of milk cows	21	75	39	24	16	10	7
Animal units	32	101	52	33	22	15	10
Eastern Ohio-Western Pennsylvania Dairy Region							
Number of farms	40,636	258	4,432	12,439	12,911	7,055	3,541
Average per farm:							
All land in farms—acres	153	456	243	172	133	115	94
Cropland harvested—do	62	198	122	76	51	35	21
Total investment—dollars	23,137	80,978	46,358	27,723	19,143	13,764	8,508
Land and buildings—do	15,112	55,326	31,303	18,154	12,259	8,839	5,647
Machinery and equipment—do	4,706	13,619	8,655	5,572	4,135	2,967	1,627
Livestock—do	3,319	12,033	6,400	3,997	2,749	1,958	1,234
Man-equivalent of labor	1.4	4.4	2.2	1.5	1.3	1.0	1.0
Number of milk cows	15	55	29	18	13	9	6
Animal units	24	88	46	29	20	15	10
Central Michigan-New York Lake Shore Dairy Region							
Number of farms	35,605	551	6,925	12,068	9,286	5,175	1,600
Average per farm:							
All land in farms—acres	157	457	243	162	118	94	72
Cropland harvested—do	87	274	148	92	61	39	23
Total investment—dollars	32,792	113,217	55,999	33,703	22,274	16,031	11,400
Land and buildings—do	23,136	85,052	40,588	23,587	14,986	10,913	8,054
Machinery and equipment—do	5,897	14,996	8,884	6,234	4,705	3,414	2,256
Livestock—do	3,759	13,169	6,527	3,882	2,583	1,704	1,090
Man-equivalent of labor	1.3	4.2	1.8	1.4	1.1	0.9	0.9
Number of milk cows	18	59	31	19	12	8	5
Animal units	28	93	48	29	19	13	8
Northern Lake Dairy Region							
Number of farms	124,501	425	10,548	41,266	46,789	20,843	4,630
Average per farm:							
All land in farms—acres	157	483	240	176	142	116	95
Cropland harvested—do	74	287	137	89	63	43	29
Total investment—dollars	24,169	106,500	48,308	29,208	19,754	13,414	9,594
Land and buildings—do	15,212	74,200	32,207	18,412	12,073	8,102	6,088
Machinery and equipment—do	4,797	14,429	8,206	5,622	4,243	3,086	2,133
Livestock—do	4,160	17,871	7,895	5,174	3,438	2,226	1,373
Man-equivalent of labor	1.4	4.5	2.0	1.6	1.4	1.1	1.0
Number of milk cows	18	69	31	22	15	10	6
Animal units	30	123	56	37	25	16	10
Northern Woods Dairy Region							
Number of farms	28,001	32	385	3,294	9,465	10,820	4,005
Average per farm:							
All land in farms—acres	186	461	407	271	203	162	117
Cropland harvested—do	57	207	147	94	63	46	30
Total investment—dollars	15,388	60,537	37,618	25,954	16,944	12,465	8,608
Land and buildings—do	8,959	36,953	22,513	15,844	9,763	7,106	5,063
Machinery and equipment—do	3,694	11,476	8,321	5,442	4,073	3,193	2,208
Livestock—do	2,735	12,108	6,784	4,668	3,108	2,166	1,337
Man-equivalent of labor	1.3	4.4	2.3	1.6	1.4	1.2	1.1
Number of milk cows	13	50	29	21	15	10	6
Animal units	20	89	49	35	23	16	10

Table 9.—Farm Labor Force on Dairy Farms, by Economic Class of Farm, for Major Dairy Regions: 1954

Major dairy region and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Northeastern Dairy Region							
Number of farms	67,521	1,215	12,525	24,658	19,447	7,965	1,711
Average per farm:							
Family labor	1.1	1.0	1.2	1.2	1.0	0.8	0.9
Operator	.7	.7	.8	.8	.7	.5	.7
Other	.4	.3	.4	.4	.3	.3	.2
Hired labor	.4	4.3	1.0	.3	.1	.1	(Z)
Man-equivalent per farm	1.5	5.3	2.2	1.5	1.1	.9	.9
Crop acres per man-equivalent	62	50	66	63	62	57	48
Value of all farm products sold per man-equivalent—dollars	4,837	6,846	6,446	4,775	3,463	2,228	1,003
Number of milk cows per man-equivalent	16	14	18	17	14	12	8
Eastern Ohio-Western Pennsylvania Dairy Region							
Number of farms	40,636	258	4,432	12,439	12,911	7,055	3,541
Average per farm:							
Family labor	1.2	1.3	1.3	1.2	1.2	.9	1.0
Operator	.7	.8	.8	.8	.7	.5	.7
Other	.5	.5	.5	.4	.5	.4	.3
Hired labor	.2	3.1	.9	.3	.1	.1	(Z)
Man-equivalent per farm	1.4	4.4	2.2	1.5	1.3	1.0	1.0
Crop acres per man-equivalent	56	58	66	63	50	49	33
Value of all farm products sold per man-equivalent—dollars	3,849	6,981	6,117	4,660	2,892	1,883	751
Number of milk cows per man-equivalent	11	13	13	12	10	8	6
Central Michigan-New York Lake Shore Dairy Region							
Number of farms	35,605	551	6,925	12,068	9,286	5,175	1,600
Average per farm:							
Family labor	1.0	1.1	1.2	1.2	1.0	.9	.9
Operator	.7	.8	.8	.8	.7	.6	.7
Other	.3	.3	.4	.4	.3	.3	.2
Hired labor	.3	3.1	.6	.2	.1	(Z)	(Z)
Man-equivalent per farm	1.3	4.2	1.8	1.4	1.1	.9	.9
Crop acres per man-equivalent	88	82	103	86	76	67	43
Value of all farm products sold per man-equivalent—dollars	5,393	8,250	7,825	5,120	3,455	2,121	929
Number of milk cows per man-equivalent	14	14	17	14	11	9	6
Northern Lake Dairy Region							
Number of farms	124,501	425	10,548	41,266	46,789	20,843	4,630
Average per farm:							
Family labor	1.2	1.3	1.4	1.4	1.3	1.1	1.1
Operator	.7	.7	.9	.9	.8	.8	.8
Other	.5	.6	.5	.5	.5	.3	.3
Hired labor	.2	3.2	.6	.2	.1	(Z)	(Z)
Man-equivalent per farm	1.4	4.5	2.0	1.6	1.4	1.1	1.0
Crop acres per man-equivalent	66	80	84	68	56	50	40
Value of all farm products sold per man-equivalent—dollars	3,785	7,616	6,616	4,324	2,689	1,749	851
Number of milk cows per man-equivalent	13	15	16	14	11	9	6
Northern Woods Dairy Region							
Number of farms	28,001	32	385	3,294	9,465	10,820	4,005
Average per farm:							
Family labor	1.2	1.2	1.4	1.4	1.3	1.2	1.1
Operator	.7	.8	.8	.8	.8	.7	.8
Other	.5	.4	.6	.6	.5	.5	.3
Hired labor	.1	3.2	.9	.2	.1	(Z)	(Z)
Man-equivalent per farm	1.3	4.4	2.3	1.6	1.4	1.2	1.1
Crop acres per man-equivalent	59	68	85	77	60	53	40
Value of all farm products sold per man-equivalent—dollars	2,307	8,209	5,433	4,091	2,499	1,541	755
Number of milk cows per man-equivalent	10	11	13	13	11	8	6

Z Less than 0.5.

Table 10.—Farm Mechanization and Home Conveniences on Dairy Farms, by Economic Class of Farm, for Major Dairy Regions: 1954

Major dairy region and item	Total	I	II	III	IV	V	VI
Northeastern Dairy Region							
Average number per farm:							
Automobiles	1	3	2	1	1	1	1
Tractors	1	3	2	1	1	1	1
Motortrucks	1	2	1	1	1	(Z)	(Z)
Field forage harvesters	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Pick-up hay balers	(Z)	1	1	(Z)	(Z)	(Z)	(Z)
Corn pickers	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Grain combines	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Power feed grinders	1	1	1	1	1	1	1
Milking machines	1	1	1	1	1	1	1
Percent of farms reporting:							
Automobiles	84	98	93	86	80	77	63
Tractors	89	98	98	95	86	71	47
Motortrucks	62	94	83	65	53	44	27
Field forage harvesters	17	76	44	16	5	2	1
Pick-up hay balers	35	85	65	41	19	7	3
Corn pickers	3	12	8	2	1	(Z)	1
Grain combines	13	40	25	14	7	3	1
Power feed grinders	8	24	13	8	6	4	6
Milking machines	90	98	98	96	89	69	34
Eastern Ohio-Western Pennsylvania Dairy Region							
Average number per farm:							
Automobiles	1	3	2	1	1	1	1
Tractors	1	3	2	2	1	1	1
Motortrucks	1	2	1	1	1	(Z)	(Z)
Field forage harvesters	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Pick-up hay balers	(Z)	1	1	(Z)	(Z)	(Z)	(Z)
Corn pickers	(Z)	1	1	(Z)	(Z)	(Z)	(Z)
Grain combines	(Z)	1	1	(Z)	(Z)	(Z)	(Z)
Power feed grinders	1	1	1	1	1	1	1
Milking machines	1	1	1	1	1	1	1
Percent of farms reporting:							
Automobiles	82	94	95	87	83	77	55
Tractors	86	100	98	95	89	76	43
Motortrucks	53	92	79	61	50	39	26
Field forage harvesters	12	66	41	16	5	2	1
Pick-up hay balers	33	83	71	47	25	11	3
Corn pickers	21	72	50	30	15	7	2
Grain combines	27	74	60	39	20	10	3
Power feed grinders	29	69	48	37	25	18	9
Milking machines	72	94	96	90	76	45	12
Central Michigan-New York Lake Shore Dairy Region							
Average number per farm:							
Automobiles	1	3	2	1	1	1	1
Tractors	2	4	3	2	1	1	1
Motortrucks	1	2	1	1	1	(Z)	(Z)
Field forage harvesters	(Z)	1	1	(Z)	(Z)	(Z)	(Z)
Pick-up hay balers	(Z)	1	1	(Z)	(Z)	(Z)	(Z)
Corn pickers	(Z)	1	1	(Z)	(Z)	(Z)	(Z)
Grain combines	1	1	1	1	(Z)	(Z)	(Z)
Power feed grinders	1	1	1	1	1	1	1
Milking machines	1	1	1	1	1	1	1
Percent of farms reporting:							
Automobiles	92	98	97	94	89	86	76
Tractors	95	99	98	98	96	89	68
Motortrucks	55	95	78	60	48	34	23
Field forage harvesters	23	73	62	24	10	3	1
Pick-up hay balers	34	80	60	41	21	9	4
Corn pickers	28	64	55	33	15	6	2
Grain combines	50	85	74	60	40	20	8
Power feed grinders	25	56	42	28	18	10	8
Milking machines	83	98	98	94	81	56	23
Northern Lake Dairy Region							
Average number per farm:							
Automobiles	1	3	2	1	1	1	1
Tractors	2	4	2	2	1	1	1
Motortrucks	1	2	1	1	(Z)	(Z)	(Z)
Field forage harvesters	(Z)	1	1	(Z)	(Z)	(Z)	(Z)
Pick-up hay balers	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Corn pickers	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Grain combines	(Z)	1	1	(Z)	(Z)	(Z)	(Z)
Power feed grinders	1	1	1	1	1	1	1
Milking machines	1	1	1	1	1	1	1
Percent of farms reporting:							
Automobiles	93	97	98	96	93	89	78
Tractors	94	100	98	97	96	87	65
Motortrucks	50	88	84	63	43	28	19
Field forage harvesters	20	76	54	30	12	3	1
Pick-up hay balers	18	66	42	25	13	5	2
Corn pickers	17	72	49	24	11	4	2
Grain combines	21	63	52	30	16	6	3
Power feed grinders	22	47	40	28	19	11	5
Milking machines	82	99	98	96	84	52	19

Table 10.—Farm Mechanization and Home Conveniences on Dairy Farms, by Economic Class of Farm, for Major Dairy Regions: 1954—Continued

Major dairy region and item	Total	I	II	III	IV	V	VI
Northern Woods Dairy Region							
Average number per farm:							
Automobiles	1	2	2	1	1	1	1
Tractors	1	3	2	2	1	1	1
Motortrucks	(Z)	2	1	1	1	(Z)	(Z)
Field forage harvesters	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Pick-up hay balers	(Z)	1	1	(Z)	(Z)	(Z)	(Z)
Corn pickers	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Grain combines	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Power feed grinders	1	1	1	1	1	1	1
Milking machines	1	1	1	1	1	1	1
Percent of farms reporting:							
Automobiles	85	100	94	92	86	85	74
Tractors	91	100	97	97	96	90	72
Motortrucks	42	100	83	62	47	35	26
Field forage harvesters	7	84	38	24	7	2	(Z)
Pick-up hay balers	17	69	60	38	21	11	4
Corn pickers	3	16	19	8	2	1	1
Grain combines	14	69	43	31	17	10	3
Power feed grinders	20	53	39	33	23	16	9
Milking machines	62	100	94	95	80	50	17

Z Less than 0.5.

Table 11.—Distribution of Operators of Dairy Farms in Each Economic Class, by Age, for Major Dairy Regions: 1954

Major dairy region and age of operator	Total	I	II	III	IV	V	VI
Northeastern Dairy Region							
Total	100	100	100	100	100	100	100
Under 25 years	2	1	2	3	2	1	1
25 to 34 years	13	14	14	15	12	9	4
35 to 44 years	23	21	26	24	21	22	8
45 to 54 years	25	30	27	25	25	23	16
55 to 65 years	21	23	20	20	23	21	24
65 years and over	16	11	11	13	17	24	47
Eastern Ohio-Western Pennsylvania Dairy Region							
Total	100	100	100	100	100	100	100
Under 25 years	2	2	2	2	2	1	----
25 to 34 years	13	6	17	17	13	10	4
35 to 44 years	23	25	26	27	24	21	10
45 to 54 years	24	27	26	24	24	24	18
55 to 65 years	21	25	18	19	22	22	24
65 years and over	17	15	11	11	15	22	44
Central Michigan-New York Lake Shore Dairy Region							
Total	100	100	100	100	100	100	100
Under 25 years	2	----	2	2	2	1	1
25 to 34 years	13	24	20	15	11	8	2
35 to 44 years	24	20	27	27	23	18	5
45 to 54 years	24	26	24	27	24	23	12
55 to 65 years	21	20	19	19	23	26	25
65 years and over	16	10	8	10	17	24	55
Northern Lake Dairy Region							
Total	100	100	100	100	100	100	100
Under 25 years	2	1	2	2	2	1	2
25 to 34 years	16	15	21	20	15	11	5
35 to 44 years	25	23	30	30	26	19	9
45 to 54 years	26	25	25	25	27	26	16
55 to 65 years	20	30	17	16	20	25	31
65 years and over	11	6	5	7	10	18	37
Northern Woods Dairy Region							
Total	100	100	100	100	100	100	100
Under 25 years	1	----	----	2	1	1	1
25 to 34 years	12	19	17	17	13	12	4
35 to 44 years	24	16	22	29	28	25	10
45 to 54 years	23	19	18	23	27	23	17
55 to 65 years	22	16	23	18	20	22	29
65 years and over	18	30	20	11	11	17	39

Table 12.—Land Use on Dairy Farms, by Economic Class of Farm, for Major Dairy Regions: 1954

Major dairy region and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Northeastern Dairy Region							
Number of farms	67,521	1,215	12,525	24,658	19,447	7,965	1,711
Average per farm:							
All land in farms—acres	218	565	323	222	167	131	115
Cropland harvested—do	70	197	110	72	51	35	27
Cropland pastured—do	18	60	30	17	13	10	9
Cropland not harvested and not pastured—acres	5	9	5	5	5	5	7
Total cropland—do	93	266	145	94	69	50	43
Total pasture—do	97	220	140	100	76	60	49
Percent of cropland harvested in:							
Corn for all purposes—percent	12	16	14	12	9	6	6
Corn for grain—do	1	2	2	1	1	1	2
Small grains—do	12	11	13	12	10	8	10
All hay—do	74	72	70	73	79	82	83
Other crops—do	2	1	3	3	2	4	1
Eastern Ohio-Western Pennsylvania Dairy Region							
Number of farms	40,636	258	4,432	12,439	12,911	7,055	3,541
Average per farm:							
All land in farms—acres	153	456	243	172	133	115	94
Cropland harvested—do	62	198	122	76	51	35	21
Cropland pastured—do	12	50	19	14	10	9	7
Cropland not harvested and not pastured—acres	4	7	4	4	4	4	4
Total cropland—do	78	255	145	94	65	48	32
Total pasture—do	59	163	78	62	53	54	51
Percent of cropland harvested in:							
Corn for all purposes—percent	23	26	25	24	22	21	18
Corn for grain—do	17	17	18	17	17	17	16
Small grains—do	29	27	29	32	28	24	16
All hay—do	45	45	43	43	46	52	63
Other crops—do	3	2	3	1	4	3	3
Central Michigan-New York Lake Shore Dairy Region							
Number of farms	35,605	551	6,925	12,068	9,286	5,175	1,600
Average per farm:							
All land in farms—acres	157	457	243	162	118	94	72
Cropland harvested—do	87	274	148	92	61	39	23
Cropland pastured—do	22	59	33	23	18	15	15
Cropland not harvested and not pastured—acres	5	10	5	5	5	6	5
Central Michigan-New York Lake Shore Dairy Region—Continued							
Average per farm—Continued							
Total cropland—acres	114	343	186	120	84	60	43
Total pasture—do	46	123	65	46	37	34	30
Percent of cropland harvested in:							
Corn for all purposes—percent	28	31	31	28	26	26	20
Corn for grain—do	19	21	26	18	17	18	16
Small grains—do	31	30	30	32	31	29	24
All hay—do	35	34	33	34	38	41	51
Other crops—do	6	5	6	6	5	4	5
Northern Lake Dairy Region							
Number of farms	124,501	425	10,548	41,266	46,789	20,843	4,630
Average per farm:							
All land in farms—acres	157	483	240	176	142	116	95
Cropland harvested—do	74	287	137	89	63	43	29
Cropland pastured—do	15	69	28	18	12	9	7
Cropland not harvested and not pastured—acres	3	5	3	2	2	3	4
Total cropland—do	92	361	168	109	77	55	40
Total pasture—do	59	151	74	63	56	50	44
Percent of cropland harvested in:							
Corn for all purposes—percent	27	37	32	28	25	22	20
Corn for grain—do	14	24	20	15	12	10	11
Small grains—do	32	29	31	33	32	29	26
All hay—do	38	32	32	36	40	46	53
Other crops—do	3	2	5	3	3	3	1
Northern Woods Dairy Region							
Number of farms	28,001	32	385	3,294	9,465	10,820	4,005
Average per farm:							
All land in farms—acres	186	461	407	271	203	162	117
Cropland harvested—do	57	207	147	94	63	46	30
Cropland pastured—do	16	58	38	25	16	14	10
Cropland not harvested and not pastured—acres	5	33	10	4	4	5	4
Total cropland—do	78	298	195	123	83	65	44
Total pasture—do	81	190	149	113	90	72	51
Percent of cropland harvested in:							
Corn for all purposes—percent	11	18	13	13	11	9	8
Corn for grain—do	4	5	5	5	4	3	4
Small grains—do	21	17	27	24	22	19	14
All hay—do	65	53	55	58	63	70	74
Other crops—do	3	12	5	5	4	2	4

Table 13.—Average Number of Livestock per Farm for Dairy Farms, by Economic Class of Farm, for Major Dairy Regions: 1954

Major dairy region and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Northeastern Dairy Region							
Number of farms	67,521	1,215	12,525	24,658	19,447	7,965	1,711
Average number per farm:							
All cattle and calves	38	121	63	39	26	18	12
Cows and heifers	24	76	39	25	16	10	7
Milk cows	24	75	39	24	16	10	7
Hogs and pigs	1	2	1	1	1	1	1
Chickens 4 months old and over	53	165	100	52	31	22	21
Sheep and lambs	1	3	1	1	1	1	1
Ewes 1 year old and over	1	2	1	1	(Z)	(Z)	(Z)
Eastern Ohio-Western Pennsylvania Dairy Region							
Number of farms	40,636	258	4,432	12,439	12,911	7,055	3,541
Average number per farm:							
All cattle and calves	27	102	52	32	23	16	10
Cows and heifers	16	56	29	19	13	9	6
Milk cows	15	55	29	18	13	9	6
Hogs and pigs	6	24	12	7	4	4	3
Chickens 4 months old and over	96	183	187	123	74	52	42
Sheep and lambs	3	7	3	3	3	3	2
Ewes 1 year old and over	2	4	2	2	2	2	1
Central Michigan-New York Lake Shore Dairy Region							
Number of farms	35,605	551	6,925	12,068	9,286	5,175	1,600
Average number per farm:							
All cattle and calves	32	109	55	33	22	15	9
Cows and heifers	18	59	31	19	13	8	6
Milk cows	18	59	31	19	12	8	5
Central Michigan-New York Lake Shore Dairy Region—Continued							
Average number per farm—Con.							
Hogs and pigs	6	28	14	6	3	2	2
Chickens 4 months old and over	88	123	115	101	75	55	38
Sheep and lambs	2	6	4	3	1	1	1
Ewes 1 year old and over	1	4	2	2	1	(Z)	(Z)
Northern Lake Dairy Region							
Number of farms	124,501	425	10,548	41,266	46,789	20,843	4,630
Average number per farm:							
All cattle and calves	32	132	57	39	27	18	11
Cows and heifers	18	70	32	22	15	10	6
Milk cows	18	69	31	22	15	10	6
Hogs and pigs	13	69	35	18	9	4	2
Chickens 4 months old and over	109	200	175	138	96	60	39
Sheep and lambs	2	12	3	2	1	1	1
Ewes 1 year old and over	1	8	2	1	1	1	1
Northern Woods Dairy Region							
Number of farms	28,001	32	385	3,294	9,465	10,820	4,005
Average number per farm:							
All cattle and calves	24	109	60	42	28	19	12
Cows and heifers	13	55	30	22	15	10	6
Milk cows	13	50	29	21	15	10	6
Hogs and pigs	2	4	6	4	3	2	1
Chickens 4 months old and over	38	102	79	62	42	31	24
Sheep and lambs	2	24	9	4	2	2	1
Ewes 1 year old and over	1	14	5	2	1	1	(Z)

Z Less than 0.5.

Table 14.—Average Sales of Dairy Products per Cow and Distribution of the Sales of Dairy Products, by Economic Class of Farm, for Special Dairy Areas: 1954

Special dairy area and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Subregion 54							
Dairy products sold per cow, total—dollars	139	257	213	175	122	101	77
pounds of milk equivalent	3,979	7,407	4,963	4,385	3,939	3,276	2,708
Whole milk—dollars	138	257	213	175	122	100	74
Cream—do	1				1	1	3
Percent distribution of products sold by economic class:							
All dairy products—do	100.0	6.5	17.2	29.7	22.0	18.7	5.9
pounds of milk	100.0	6.6	14.0	26.1	24.8	21.2	7.3
Whole milk—dollars	100.0	6.5	17.3	29.9	22.0	18.6	5.7
Cream—do	100.0				19.7	30.9	49.4
Average value of milk per cwt. sold—do	3.49	3.46	4.35	3.95	3.07	3.24	2.92
Subregion 58							
Dairy products sold per cow, total—dollars	198	316	246	195	148	95	61
pounds of milk equivalent	3,671	4,858	4,481	3,631	2,981	2,122	1,040
Whole milk—dollars	198	314	246	195	148	95	61
Cream—do	(Z)	1		(Z)	1		
Percent distribution of products sold by economic class:							
All dairy products—do	100.0	10.3	31.8	36.0	19.4	2.3	0.2
pounds of milk	100.0	8.6	31.3	36.1	21.1	2.7	.2
Whole milk—dollars	100.0	10.3	31.9	36.0	19.4	2.3	.1
Cream—do	100.0	60.0		6.4	33.6		
Average value of milk per cwt. sold—do	5.39	6.48	5.49	5.37	4.96	4.48	5.87
Subregions 73 and 82							
Dairy products sold per cow, total—dollars	150	384	261	211	157	118	81
pounds of milk equivalent	4,634	9,468	6,996	6,301	4,876	3,857	2,766
Whole milk—dollars	149	384	260	210	156	117	78
Cream—do	1		1	1	1	1	3
Percent distribution of products sold by economic class:							
All dairy products—do	100.0	2.4	11.6	22.7	29.1	26.1	8.1
pounds of milk	100.0	1.9	10.1	22.0	29.3	27.7	9.0
Whole milk—dollars	100.0	2.4	11.7	22.8	29.1	26.1	7.9
Cream—do	100.0		1.3	2.3	22.7	32.5	41.2
Average value of milk per cwt. sold—do	3.24	4.06	3.73	3.35	3.22	3.06	2.93
Subregion 112							
Dairy products sold per cow, total—dollars	245	414	304	253	204	172	116
pounds of milk equivalent	7,218	7,569	8,012	7,651	6,800	6,148	4,177
Whole milk—dollars	243	410	303	252	202	169	113
Cream—do	2	4	1	1	2	3	3
Percent distribution of products sold by economic class:							
All dairy products—dollars	100.0	8.4	24.3	34.6	22.8	8.9	1.0
pounds of milk	100.0	5.2	21.7	35.4	25.7	10.7	1.3
Whole milk—dollars	100.0	8.4	24.4	34.7	22.8	8.7	1.0
Cream—do	100.0	13.1	13.4	21.2	24.0	24.1	4.2
Average value of milk per cwt. sold—do	3.39	5.48	3.79	3.31	3.00	2.75	2.78
Subregion 115							
Dairy products sold per cow, total—dollars	548	558	271	184	156	152	
pounds of milk equivalent	11,112	11,279	6,258	5,158	4,479	4,496	
Whole milk—dollars	548	558	271	184	156	152	
Cream—do	(Z)	(Z)					
Percent distribution of products sold by economic class:							
All dairy products—do	100.0	98.7	1.0	.2	.1		
pounds of milk	100.0	98.4	1.1	.4	.1		(Z)
Whole milk—dollars	100.0	98.7	1.0	.2	.1		
Cream—do	100.0	100.0					
Average value of milk per cwt. sold—do	4.93	4.95	4.33	3.56	3.48	3.38	
Subregion 116							
Dairy products sold per cow, total—dollars	273	348	256	215	181	148	98
pounds of milk equivalent	7,643	8,729	7,643	6,836	5,852	4,776	3,185
Whole milk—dollars	273	348	255	214	180	146	97
Cream—do	(Z)	(Z)	1	1	1	2	1
Percent distribution of products sold by economic class:							
All dairy products—do	100.0	49.8	27.4	15.0	5.9	1.8	.1
pounds of milk	100.0	44.7	29.2	17.1	6.8	2.1	.1
Whole milk—dollars	100.0	49.9	27.3	15.0	5.9	1.8	.1
Cream—do	100.0	10.9	51.7	14.9	13.0	9.1	.4
Average value of milk per cwt. sold—do	3.57	3.99	3.35	3.15	3.09	3.10	3.08
Subregions 118 and 119							
Dairy products sold per cow, total—dollars	288	377	333	281	202	165	126
pounds of milk equivalent	7,031	8,271	7,668	7,072	5,617	5,249	4,144
Whole milk—dollars	283	376	330	279	193	152	106
Cream—do	5	1	3	2	9	13	20
Percent distribution of products sold by economic class:							
All dairy products—do	100.0	15.0	42.8	27.2	9.6	4.6	.8
pounds of milk	100.0	13.5	40.4	28.1	11.0	6.0	1.0
Whole milk—dollars	100.0	15.2	43.0	27.4	9.4	4.4	.6
Cream—do	100.0	2.1	28.2	13.7	25.6	22.5	7.9
Average value of milk per cwt. sold—do	4.10	4.56	4.34	3.97	3.60	3.14	3.04

Z Less than 0.5.

Table 15.—Average Sales of Dairy Products per Cow and Distribution of the Sales of Dairy Products, by Economic Class of Farm, for Major Dairy Regions: 1954

Major dairy region and item		Economic class of farm						
		Total	I	II	III	IV	V	VI
Northeastern Dairy Region								
Dairy products sold per cow, total	dollars	264	405	309	254	204	160	89
	pounds of milk equivalent	6,526	8,036	7,549	6,441	5,361	4,361	2,782
Whole milk	dollars	263	403	309	254	204	157	78
Cream	do	1	2	(Z)	(Z)	(Z)	3	11
Percent distribution of products sold by economic class:								
All dairy products	do	100.0	8.8	36.2	36.4	15.2	3.1	.3
	pounds of milk	100.0	7.1	35.7	37.3	16.1	3.5	.3
Whole milk	dollars	100.0	8.9	36.2	36.4	15.2	3.1	.2
Cream	do	100.0	17.7	8.8	21.3	9.3	27.8	15.1
Average value of milk per cwt. sold	do	4.04	5.04	4.10	3.94	3.81	3.67	3.20
Eastern Ohio-Western Pennsylvania Dairy Region								
Dairy products sold per cow, total	dollars	251	423	328	269	213	143	82
	pounds of milk equivalent	6,298	9,110	7,718	6,696	5,593	4,200	3,082
Whole milk	dollars	219	420	327	268	211	139	59
Cream	do	2	3	1	1	2	4	23
Percent distribution of products sold by economic class:								
All dairy products	do	100.0	3.9	26.8	39.7	22.7	5.8	1.1
	pounds of milk	100.0	3.3	25.2	39.4	23.8	6.7	1.6
Whole milk	dollars	100.0	3.9	27.0	40.0	22.7	5.6	.8
Cream	do	100.0	3.6	2.6	13.4	20.5	23.9	36.0
Average value of milk per cwt. sold	do	3.98	4.65	4.25	4.02	3.81	3.41	2.67
Central Michigan-New York Lake Shore Dairy Region								
Dairy products sold per cow, total	dollars	259	383	302	256	205	147	98
	pounds of milk equivalent	7,261	9,358	8,143	7,294	6,090	4,973	3,750
Whole milk	do	256	382	301	255	200	135	69
Cream	do	3	1	(Z)	1	4	12	29
Percent distribution of products sold by economic class:								
All dairy products	do	100.0	7.5	39.0	35.0	14.2	3.8	.5
	pounds of milk	100.0	6.5	37.5	35.6	15.1	4.6	.7
Whole milk	dollars	100.0	7.5	39.3	35.2	14.1	3.5	.4
Cream	do	100.0	1.6	5.3	16.0	29.1	32.4	15.6
Average value of milk per cwt. sold	do	3.57	4.10	3.71	3.51	3.36	2.97	2.62
Northern Lake Dairy Region								
Dairy products sold per cow, total	dollars	201	323	261	213	174	138	97
	pounds of milk equivalent	6,594	9,772	8,242	6,987	5,857	4,814	3,445
Whole milk	dollars	195	327	259	208	166	127	81
Cream	do	6	3	3	5	8	11	16
Percent distribution of products sold by economic class:								
All dairy products	do	100.0	2.1	19.5	43.2	28.0	6.5	.7
	pounds of milk	100.0	2.0	18.7	43.1	28.6	6.9	.7
Whole milk	dollars	100.0	2.2	19.9	43.6	27.6	6.2	.5
Cream	do	100.0	.6	6.7	30.9	40.9	17.5	3.4
Average value of milk per cwt. sold	do	3.04	3.31	3.17	3.05	2.97	2.86	2.81
Northern Woods Dairy Region								
Dairy products sold per cow, total	dollars	174	446	293	230	179	135	94
	pounds of milk equivalent	5,674	13,282	8,327	6,796	5,794	4,842	3,718
Whole milk	dollars	150	445	276	218	157	101	53
Cream	do	24	1	17	11	22	34	41
Percent distribution of products sold by economic class:								
All dairy products	do	100.0	1.1	4.7	23.8	40.0	25.9	4.5
	pounds of milk	100.0	1.2	5.3	26.2	40.1	23.5	3.7
Whole milk	dollars	100.0	1.3	5.8	28.9	41.1	20.4	2.5
Cream	do	100.0	(Z)	2.2	9.2	34.6	42.3	11.7
Average value of milk per cwt. sold	do	3.07	3.36	3.52	3.38	3.08	2.79	2.54

Z Less than 0.5.

Table 16.—Measure of Size of Business for Dairy Farms, by Economic Class of Farm, by Special Dairy Areas: 1954

Special dairy area and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Subregion 54							
Number of farms	6,681	37	255	848	1,396	2,435	1,710
Average per farm:							
All land in farms...acres	143	750	363	227	166	114	76
Cropland harvested...do	36	259	102	69	46	25	14
Total investment...dollars	15,721	103,934	48,304	32,139	17,798	11,376	6,526
Land and buildings...do	11,198	75,834	34,979	23,735	12,513	8,042	4,681
Machinery and equipment ...do	2,468	14,429	6,707	4,579	2,864	1,904	1,009
Livestock...do	2,055	13,671	6,618	3,825	2,421	1,430	836
Man-equivalent of labor	1.3	5.0	2.4	1.7	1.2	1.1	1.0
Number of milk cows	15	95	43	28	18	11	6
Animal units	23	161	78	44	28	16	9
Subregion 58							
Number of farms	2,730	53	431	996	960	240	50
Average per farm:							
All land in farms...acres	143	852	256	124	95	75	49
Cropland harvested...do	26	164	52	22	15	12	8
Total investment...dollars	20,736	84,225	44,267	19,097	12,711	12,282	6,775
Land and buildings...do	14,930	62,992	34,508	13,529	8,529	8,834	4,185
Machinery and equipment ...do	3,007	8,894	5,178	2,922	2,150	1,960	1,228
Livestock...do	2,799	12,339	4,581	2,646	2,032	1,488	1,362
Man-equivalent of labor	1.5	5.2	2.2	1.4	1.2	1.0	1.1
Number of milk cows	32	105	51	32	23	17	11
Animal units	44	199	73	42	32	23	21
Subregions 73 and 82							
Number of farms	23,017	39	516	1,962	5,182	8,988	6,330
Average per farm:							
All land in farms...acres	169	816	364	263	198	153	118
Cropland harvested...do	34	215	119	76	46	26	16
Total investment...dollars	12,482	87,686	38,569	25,903	15,410	10,168	6,848
Land and buildings...do	8,228	64,494	27,117	18,009	10,036	6,485	4,528
Machinery and equipment ...do	2,376	9,715	5,895	4,257	3,054	2,089	1,315
Livestock...do	1,878	13,477	5,557	3,637	2,320	1,594	1,005
Man-equivalent of labor	1.3	4.0	2.0	1.5	1.3	1.1	1.0
Number of milk cows	12	67	36	23	15	10	7
Animal units	19	144	58	38	25	16	10
Subregion 112							
Number of farms	8,459	108	766	2,235	2,819	2,010	521
Average per farm:							
All land in farms...acres	102	332	176	121	93	64	58
Cropland harvested...do	44	134	87	55	42	21	16
Total investment...dollars	29,572	110,855	58,575	36,454	25,354	16,416	11,819
Land and buildings...do	22,233	88,115	44,675	27,519	18,886	11,864	8,696
Machinery and equipment ...do	4,046	12,073	6,761	4,811	3,722	2,735	1,924
Livestock...do	3,293	10,667	7,139	4,124	2,746	1,817	1,199
Subregion 112—Continued							
Average per farm—Continued							
Man-equivalent of labor	1.1	3.6	2.0	1.3	1.0	.7	.8
Number of milk cows	15	60	31	18	12	8	5
Animal units	25	86	55	32	22	14	10
Subregion 115							
Number of farms	1,101	974	54	43	20	10	------
Average per farm:							
All land in farms...acres	183	198	93	65	53	53	------
Cropland harvested...do	32	32	45	26	8	31	------
Total investment...dollars	136,502	144,695	131,802	38,531	13,161	41,461	------
Land and buildings...do	102,933	108,506	112,193	27,778	6,300	36,200	------
Machinery and equipment ...do	6,464	6,767	5,797	3,625	1,538	2,667	------
Livestock...do	27,105	29,422	13,812	7,128	5,323	2,594	------
Man-equivalent of labor	5.6	6.1	1.8	1.2	1.2	.4	------
Number of milk cows	178	195	70	40	21	5	------
Animal units	210	229	96	54	34	14	------
Subregion 116							
Number of farms	8,783	1,088	2,099	2,484	1,832	1,125	155
Average per farm:							
All land in farms...acres	104	346	126	64	44	27	28
Cropland harvested...do	36	127	44	21	12	7	3
Total investment...dollars	56,674	172,358	68,017	39,851	26,425	18,819	6,838
Land and buildings...do	43,375	134,250	52,336	30,451	19,436	13,691	3,526
Machinery and equipment ...do	5,068	11,770	5,770	3,981	3,414	2,814	1,868
Livestock...do	8,231	26,338	9,911	5,419	3,575	2,314	1,444
Man-equivalent of labor	1.7	4.0	1.8	1.3	1.0	.8	.9
Number of milk cows	41	131	51	28	18	11	8
Animal units	59	183	70	38	25	16	11
Subregions 118 and 119							
Number of farms	12,321	372	2,576	3,252	2,564	2,567	990
Average per farm:							
All land in farms...acres	109	366	157	103	95	73	40
Cropland harvested...do	29	101	47	27	22	16	10
Total investment...dollars	34,797	112,839	57,655	34,443	25,835	20,111	13,796
Land and buildings...do	26,873	89,218	45,456	26,438	19,590	15,219	10,952
Machinery and equipment ...do	4,331	10,700	6,053	4,323	3,704	3,249	1,912
Livestock...do	3,593	12,921	6,146	3,682	2,541	1,643	932
Man-equivalent of labor	1.3	3.6	1.8	1.4	1.1	.9	.9
Number of milk cows	21	81	38	23	14	8	5
Animal units	30	110	51	31	21	13	8

Table 17.--Farm Labor Force on Dairy Farms, by Economic Class of Farm, for Special Dairy Areas: 1954

Special dairy area and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Subregion 54							
Number of farms	6,681	37	255	848	1,396	2,435	1,710
Average per farm:							
Family labor	1.1	1.2	1.2	1.2	1.1	1.0	1.0
Operator	.8	.9	.9	.8	.8	.7	.8
Other	.3	.3	.3	.4	.3	.3	.2
Hired labor	.2	3.8	1.2	.5	.1	.1	(Z)
Man-equivalent per farm	1.3	5.0	2.4	1.7	1.2	1.1	1.0
Crop acres per man-equivalent	56.2	103.4	83.9	76.6	69.5	50.9	34.1
Value of all farm products sold per man-equivalent dollars	2,405	6,926	5,425	3,974	2,897	1,635	775
Number of milk cows per man-equivalent	12	19	18	17	14	10	6
Subregion 58							
Number of farms	2,730	53	431	996	960	240	50
Average per farm:							
Family labor	1.2	1.0	1.2	1.2	1.1	1.0	1.1
Operator	.8	.8	.9	.8	.7	.7	.8
Other	.4	.2	.3	.4	.4	.3	.3
Hired labor	.3	4.2	1.0	.2	.1	(Z)	(Z)
Man-equivalent per farm	1.5	5.2	2.2	1.4	1.2	1.0	1.1
Crop acres per man-equivalent	38.8	72.1	50.6	34.0	30.4	26.8	23.6
Value of all farm products sold per man-equivalent dollars	4,693	7,805	6,376	4,869	3,230	1,971	739
Number of milk cows per man-equivalent	21	20	24	22	19	17	9
Subregions 73 and 82							
Number of farms	23,017	39	516	1,962	5,182	8,988	6,330
Average per farm:							
Family labor	1.2	.9	1.4	1.3	1.2	1.1	1.0
Operator	.8	.6	.9	.8	.8	.7	.8
Other	.4	.3	.5	.5	.4	.4	.2
Hired labor	.1	3.1	.6	.2	.1	(Z)	(Z)
Man-equivalent per farm	1.3	4.0	2.0	1.5	1.3	1.1	1.0
Crop acres per man-equivalent	53.1	102.0	97.8	88.7	68.2	53.3	38.2
Value of all farm products sold per man-equivalent dollars	1,996	8,558	6,300	4,515	2,626	1,610	715
Number of milk cows per man-equivalent	9	17	18	15	12	9	6
Subregion 112							
Number of farms	8,459	108	766	2,235	2,819	2,010	521
Average per farm:							
Family labor	1.0	1.5	1.4	1.2	1.0	.7	.8
Operator	.7	.9	.9	.8	.7	.5	.6
Other	.3	.6	.5	.4	.3	.2	.2
Hired labor	.1	2.1	.6	.1	(Z)	(Z)	(Z)
Man-equivalent per farm	1.1	3.6	2.0	1.3	1.0	.7	.8
Crop acres per man-equivalent	55.5	61.1	60.7	56.0	54.3	40.7	25.8
Value of all farm products sold per man-equivalent dollars	4,714	8,888	6,782	5,328	3,688	2,637	897
Number of milk cows per man-equivalent	14	16	16	14	11	10	6
Subregion 115							
Number of farms	1,101	974	54	43	20	10	----
Average per farm:							
Family labor	1.1	1.1	1.4	1.0	1.1	.4	----
Operator	.9	.9	.9	.9	.9	.2	----
Other	.2	.2	.5	.1	.2	.2	----
Hired labor	4.5	5.0	.4	.2	.1	(Z)	----
Man-equivalent per farm	5.6	6.1	1.8	1.2	1.2	.4	----
Crop acres per man-equivalent	11.6	11.0	34.2	25.1	40.2	72.0	----
Value of all farm products sold per man-equivalent dollars	19,113	19,243	12,297	7,452	3,857	8,700	----
Number of milk cows per man-equivalent	32	31	38	37	18	10	----
Subregion 116							
Number of farms	8,783	1,088	2,099	2,484	1,832	1,125	155
Average per farm:							
Family labor	1.2	1.3	1.4	1.2	1.0	.8	.9
Operator	.8	.9	.9	.8	.7	.5	.8
Other	.4	.4	.5	.4	.3	.3	.1
Hired labor	.5	2.7	.4	.1	(Z)	(Z)	(Z)
Man-equivalent per farm	1.7	4.0	1.8	1.3	1.0	.8	.9
Crop acres per man-equivalent	42.4	58.9	51.8	33.6	27.4	19.7	23.5
Value of all farm products sold per man-equivalent dollars	8,126	14,181	8,652	5,459	3,797	2,170	1,019
Number of milk cows per man-equivalent	24	32	30	22	16	12	9
Subregions 118 and 119							
Number of farms	12,321	372	2,576	3,252	2,564	2,567	990
Average per farm:							
Family labor	1.1	.9	1.0	1.0	.7	.6	.7
Operator	.7	.7	.7	.7	.5	.4	.6
Other	.4	.2	.3	.3	.2	.2	.1
Hired labor	.2	2.7	.8	.4	.4	.3	.2
Man-equivalent per farm	1.3	3.6	1.8	1.4	1.1	.9	.9
Crop acres per man-equivalent	42.3	54.2	49.1	39.8	39.3	33.7	19.5
Value of all farm products sold per man-equivalent dollars	5,595	10,093	8,079	5,444	3,325	2,137	903
Number of milk cows per man-equivalent	16	23	21	17	13	10	5

Z Less than 0.5.

Table 18.—Farm Mechanization and Home Conveniences on Dairy Farms, by Economic Class of Farm, for Special Dairy Areas: 1954

Special dairy area and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Subregion 54							
Average number per farm:							
Automobiles	1	3	2	1	1	1	1
Tractors	1	4	2	1	1	(Z)	(Z)
Motortrucks	(Z)	2	1	1	(Z)	(Z)	(Z)
Field forage harvesters	(Z)	1	(Z)	(Z)	(Z)	----	----
Pick-up hay balers	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Corn pickers	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Grain combines	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Power feed grinders	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Milking machines	(NA)	(NA)	(NA)	(NA)	NA)	(NA)	(NA)
Percent of farms reporting:							
Automobiles	66	100	82	84	71	66	48
Tractors	47	100	84	86	66	40	16
Motortrucks	38	73	76	62	43	35	20
Field forage harvesters	3	49	25	12	3	----	----
Pick-up hay balers	9	70	42	23	11	4	1
Corn pickers	5	41	22	14	7	1	(Z)
Grain combines	12	57	39	34	15	7	1
Power feed grinders	16	73	48	41	22	8	2
Milking machines	29	70	80	84	41	14	5
Subregion 58							
Average number per farm:							
Automobiles	1	2	1	1	1	1	(Z)
Tractors	1	2	1	1	1	1	(Z)
Motortrucks	1	2	1	1	1	1	(Z)
Field forage harvesters	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	----
Pick-up hay balers	(Z)	(Z)	(Z)	(Z)	(Z)	----	----
Corn pickers	(Z)	(Z)	(Z)	(Z)	(Z)	----	----
Grain combines	(Z)	(Z)	(Z)	(Z)	(Z)	----	----
Power feed grinders	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Milking machines	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Percent of farms reporting:							
Automobiles	64	87	89	65	54	56	40
Tractors	67	89	92	74	55	50	30
Motortrucks	61	98	77	67	49	52	30
Field forage harvesters	5	42	14	5	1	2	----
Pick-up hay balers	6	36	18	3	4	----	----
Corn pickers	5	17	13	4	2	2	----
Grain combines	5	38	17	4	1	----	----
Power feed grinders	16	55	41	15	8	6	10
Milking machines	79	92	92	88	73	48	40
Subregions 73 and 82							
Average number per farm:							
Automobiles	1	2	1	1	1	1	(Z)
Tractors	1	2	2	1	1	1	(Z)
Motortrucks	1	2	1	1	1	1	(Z)
Field forage harvesters	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Pick-up hay balers	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Corn pickers	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	----
Grain combines	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Power feed grinders	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Milking machines	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Percent of farms reporting:							
Automobiles	57	79	89	72	61	56	47
Tractors	60	87	94	94	83	58	31
Motortrucks	53	87	77	72	63	53	37
Field forage harvesters	4	59	28	18	4	1	1
Pick-up hay balers	8	49	41	26	12	5	2
Corn pickers	1	13	6	6	1	1	(Z)
Grain combines	7	36	37	21	12	4	2
Power feed grinders	15	69	46	37	24	11	4
Milking machines	36	87	88	87	60	27	8
Subregion 112							
Average number per farm:							
Automobiles	1	2	2	1	1	1	1
Tractors	1	3	2	1	1	1	1
Motortrucks	1	2	1	1	1	1	(Z)
Field forage harvesters	(Z)	1	(Z)	(Z)	(Z)	(Z)	----
Pick-up hay balers	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Corn pickers	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Grain combines	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Power feed grinders	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Milking machines	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Subregion 112—Continued							
Percent of farms reporting:							
Automobiles	88	100	95	93	88	81	74
Tractors	81	100	99	93	85	62	52
Motortrucks	62	95	86	74	59	49	32
Field forage harvesters	10	54	31	17	5	3	----
Pick-up hay balers	19	48	36	30	16	5	4
Corn pickers	1	5	1	1	(Z)	(Z)	1
Grain combines	15	42	32	18	15	6	4
Power feed grinders	16	27	36	24	11	8	6
Milking machines	81	95	100	95	86	61	39
Subregion 115							
Average number per farm:							
Automobiles	2	2	2	1	(Z)	(Z)	----
Tractors	1	1	1	1	(Z)	(Z)	----
Motortrucks	2	2	1	1	1	(Z)	----
Field forage harvesters	(Z)	(Z)	(Z)	(Z)	----	----	----
Pick-up hay balers	(Z)	(Z)	(Z)	(Z)	----	(Z)	----
Corn pickers	(Z)	(Z)	----	----	----	----	----
Grain combines	(Z)	(Z)	----	----	----	----	----
Power feed grinders	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	----
Milking machines	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	----
Percent of farms reporting:							
Automobiles	94	96	98	77	25	50	----
Tractors	45	42	67	86	25	50	----
Motortrucks	74	74	69	88	75	50	----
Field forage harvesters	10	9	20	12	----	----	----
Pick-up hay balers	9	8	22	14	----	50	----
Corn pickers	(Z)	(Z)	----	----	----	----	----
Grain combines	1	2	----	----	----	----	----
Power feed grinders	15	15	24	----	----	50	----
Milking machines	96	98	98	88	50	50	----
Subregion 116							
Average number per farm:							
Automobiles	1	3	1	1	1	1	1
Tractors	1	3	2	1	1	1	(Z)
Motortrucks	1	2	1	1	1	1	(Z)
Field forage harvesters	(Z)	1	(Z)	(Z)	(Z)	(Z)	----
Pick-up hay balers	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	----
Corn pickers	(Z)	(Z)	----	(Z)	----	----	----
Grain combines	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	----
Power feed grinders	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Milking machines	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Percent of farms reporting:							
Automobiles	90	96	93	90	86	85	74
Tractors	79	98	90	82	69	57	23
Motortrucks	74	95	85	73	63	55	39
Field forage harvesters	13	44	19	9	3	1	----
Pick-up hay balers	18	43	29	13	7	4	----
Corn pickers	1	3	----	1	----	----	----
Grain combines	2	6	3	1	2	4	----
Power feed grinders	10	18	12	9	9	2	----
Milking machines	92	98	98	95	91	73	52
Subregions 118 and 119							
Average number per farm:							
Automobiles	1	2	1	1	1	1	1
Tractors	1	3	2	1	1	1	1
Motortrucks	1	2	1	1	1	1	(Z)
Field forage harvesters	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Pick-up hay balers	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Corn pickers	(Z)	(Z)	(Z)	(Z)	(Z)	----	----
Grain combines	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Power feed grinders	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Milking machines	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Percent of farms reporting:							
Automobiles	87	98	94	92	83	83	69
Tractors	85	97	98	93	84	78	46
Motortrucks	63	94	82	69	59	50	27
Field forage harvesters	11	52	26	10	4	2	1
Pick-up hay balers	13	48	27	13	8	4	3
Corn pickers	(Z)	(Z)	1	(Z)	(Z)	----	----
Grain combines	8	23	14	7	6	7	3
Power feed grinders	12	22	18	13	11	7	3
Milking machines	82	97	98	97	86	64	22

NA Not available. Z Less than 0.5.

Table 19.—Distribution of Operators of Dairy Farms in Each Economic Class, by Age, for Special Dairy Areas: 1954

Special dairy area and age of operator	Percent distribution for each economic class of farm						
	Total	I	II	III	IV	V	VI
Subregion 54							
Total	100	100	100	100	100	100	100
Under 25 years	1	----	----	2	1	1	1
25 to 34 years	9	42	6	11	11	10	5
35 to 44 years	23	6	31	27	32	24	12
45 to 54 years	24	14	20	30	24	26	19
55 to 65 years	23	19	32	22	17	23	26
65 years and over	20	19	11	8	15	16	37
Subregion 58							
Total	100	100	100	100	100	100	100
Under 25 years	1	----	----	2	2	----	----
25 to 34 years	19	8	15	20	20	22	30
35 to 44 years	26	30	25	25	29	20	10
45 to 54 years	31	30	34	32	29	33	----
55 to 65 years	15	23	16	13	15	22	30
65 years and over	8	9	10	8	5	4	30
Subregions 73 and 82							
Total	100	100	100	100	100	100	100
Under 25 years	1	----	(Z)	2	1	1	1
25 to 34 years	12	21	18	17	17	13	6
35 to 44 years	22	8	27	31	28	23	13
45 to 54 years	26	44	31	26	29	27	21
55 to 65 years	24	3	16	18	18	23	31
65 years and over	15	26	8	6	8	13	27
Subregion 112							
Total	100	100	100	100	100	100	100
Under 25 years	1	----	----	2	2	1	----
25 to 34 years	13	5	17	17	11	11	3
35 to 44 years	26	15	33	31	27	20	11
45 to 54 years	25	59	28	27	24	25	18
55 to 65 years	21	16	17	17	24	21	20
65 years and over	14	6	5	7	11	22	47
Subregion 115							
Total	100	100	100	100	100	100	100
Under 25 years	2	2	----	13	----	----	----
25 to 34 years	16	17	11	----	----	----	----
35 to 44 years	32	34	13	16	----	50	----
45 to 54 years	27	29	23	16	----	----	----
55 to 65 years	15	12	42	29	75	----	----
65 years and over	8	6	11	26	25	50	----
Subregion 116							
Total	100	100	100	100	100	100	100
Under 25 years	1	2	1	1	1	1	----
25 to 34 years	17	24	18	18	16	8	3
35 to 44 years	28	31	33	28	23	24	3
45 to 54 years	27	24	28	26	29	26	16
55 to 65 years	18	14	13	19	21	25	48
65 years and over	9	5	7	8	10	16	29
Subregions 118 and 119							
Total	100	100	100	100	100	100	100
Under 25 years	1	----	2	2	1	1	1
25 to 34 years	12	26	15	14	10	9	1
35 to 44 years	23	27	30	29	19	19	5
45 to 54 years	25	21	28	26	29	21	10
55 to 65 years	23	15	18	22	26	28	26
65 years and over	16	11	6	8	16	23	58

Z Less than 0.5.

Table 20.—Land Use on Dairy Farms, by Economic Class of Farm, for Special Dairy Areas: 1954

Special dairy area and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Subregion 54							
Number of farms	6,681	37	255	848	1,396	2,435	1,710
Average per farm:							
All land in farms—acres	143	750	363	227	166	114	76
Cropland harvested—do	36	259	102	69	46	25	14
Cropland pastured—do	33	223	93	53	38	25	17
Cropland not harvested and not pastured—acres	4	38	3	4	3	4	3
Total cropland—do	73	520	198	125	86	55	34
Total pasture—do	92	433	240	141	106	74	51
Percent of cropland harvested in—							
Corn for all purposes—percent	33	23	21	27	33	39	49
Corn for grain—do	24	10	9	18	24	31	40
Small grains—do	19	36	25	23	20	12	9
All hay—do	42	40	43	41	41	44	37
Other crops—do	6	1	11	9	6	5	5
Subregion 58							
Number of farms	2,730	53	431	996	960	240	50
Average per farm:							
All land in farms—acres	143	852	256	124	95	75	49
Cropland harvested—do	26	164	52	22	15	12	8
Cropland pastured—do	30	207	54	25	20	13	16
Cropland not harvested and not pastured—acres	2	7	4	2	2	2	4
Total cropland—do	58	378	109	49	37	28	27
Total pasture—do	93	593	173	80	56	49	35
Percent of cropland harvested in—							
Corn for all purposes—percent	43	23	42	42	54	60	39
Corn for grain—do	38	19	35	38	48	60	39
Small grains—do	4	9	5	3	2	----	----
All hay—do	32	28	31	37	27	33	47
Other crops—do	21	40	22	18	17	7	14
Subregions 73 and 82							
Number of farms	23,017	39	516	1,962	5,182	8,988	6,330
Average per farm:							
All land in farms—acres	169	816	364	263	198	153	118
Cropland harvested—do	34	215	119	76	46	26	16
Cropland pastured—do	32	185	73	52	37	29	22
Cropland not harvested and not pastured—acres	3	11	7	7	4	3	2
Total cropland—do	69	411	199	134	87	58	41
Total pasture—do	118	548	222	159	134	112	89
Percent of cropland harvested in—							
Corn for all purposes—percent	17	17	14	15	17	18	21
Corn for grain—do	3	1	1	2	3	4	6
Small grains—do	28	40	38	37	31	21	12
All hay—do	42	34	30	33	38	49	56
Other crops—do	13	9	18	15	14	12	11
Subregion 112							
Number of farms	8,459	108	766	2,235	2,819	2,010	521
Average per farm:							
All land in farms—acres	102	332	176	121	93	64	58
Cropland harvested—do	44	134	87	55	42	21	16
Cropland pastured—do	12	37	21	15	11	7	5
Cropland not harvested and not pastured—acres	5	47	8	4	6	2	2
Total cropland—do	61	218	116	74	59	30	23
Total pasture—do	43	140	68	51	36	33	33
Percent of cropland harvested in—							
Corn for all purposes—percent	6	12	8	8	5	4	1
Corn for grain—do	1	(Z)	1	1	1	1	(Z)
Small grains—do	28	28	28	27	31	24	23
All hay—do	52	36	47	51	53	64	66
Other crops—do	14	24	17	14	11	8	10

Table 20.—Land Use on Dairy Farms, by Economic Class of Farm, for Special Dairy Areas: 1954—Continued

Special dairy area and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Subregion 115							
Number of farms	1,101	974	54	43	20	10	------
Average per farm:							
All land in farms—acres	183	198	93	65	53	53	------
Cropland harvested—do	32	32	45	26	8	31	------
Cropland pastured—do	28	31	14	4	9	3	------
Cropland not harvested and not pastured—acres	5	5	3	------	30	3	------
Total cropland—do	65	68	62	30	47	37	------
Total pasture—do	124	138	32	15	9	3	------
Percent of cropland harvested in—							
Corn for all purposes—percent	7	6	4	------	------	------	------
Corn for grain—do	(Z)	(Z)	------	------	------	------	------
Small grains—do	12	14	11	2	------	------	------
All hay—do	66	63	85	92	100	97	------
Other crops—do	15	17	------	6	------	3	------
Subregion 116							
Number of farms	8,783	1,088	2,099	2,484	1,832	1,125	155
Average per farm:							
All land in farms—acres	104	346	126	64	44	27	28
Cropland harvested—do	36	127	44	21	12	7	3
Cropland pastured—do	32	97	40	20	15	8	17
Cropland not harvested and not pastured—acres	4	14	5	2	2	3	1
Total cropland—do	72	238	89	43	29	18	21
Total pastnre—do	58	190	70	36	26	14	21

Special dairy area and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Subregion 116—Continued							
Percent of cropland harvested [1] in—							
Corn for all purposes—percent	9	8	9	11	7	5	------
Corn for grain—do	1	1	1	1	1	------	------
Small grains—do	8	10	11	4	6	6	11
All hay—do	73	67	73	81	81	87	97
Other crops—do	10	15	7	4	6	2	3
Subregions 118 and 119							
Number of farms	12,321	372	2,576	3,252	2,564	2,567	990
Average per farm:							
All land in farms—acres	109	366	157	103	95	73	40
Cropland harvested—do	29	101	47	27	22	16	10
Cropland pastured—do	24	86	38	25	18	11	6
Cropland not harvested and not pastured—acres	2	8	3	2	2	2	2
Total cropland—do	55	195	88	54	42	29	18
Total pasture—do	56	196	79	52	50	39	19
Percent of cropland harvested in—							
Corn for all purposes—percent	2	3	2	2	2	1	1
Corn for grain—do	(Z)	------	(Z)	(Z)	(Z)	(Z)	1
Small grains—do	17	20	15	14	21	18	14
All hay—do	74	64	74	79	74	75	83
Other crops—do	7	13	9	5	3	6	2

Z Less than 0.5.
[1] Adds to more than 100 in Class VI due to double cropping.

Table 21.—Average Number of Livestock per Farm for Dairy Farms, by Economic Class of Farm, for Special Dairy Areas: 1954

Special dairy area and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Subregion 54							
Number of farms	6,681	37	255	848	1,396	2,435	1,710
Average number per farm:							
All cattle and calves	25	166	86	48	30	17	10
Cows and heifers	16	102	52	30	18	11	6
Milk cows	15	95	43	28	18	10	6
Hogs and pigs	7	49	19	13	8	5	3
Chickens 4 months old and over	58	54	113	71	61	56	45
Sheep and lambs	5	70	16	8	6	3	1
Ewes 1 year old and over	4	48	11	7	5	2	1
Subregion 58							
Number of farms	2,730	53	431	996	960	240	50
Average number per farm:							
All cattle and calves	53	229	88	50	38	27	24
Cows and heifers	33	145	54	32	24	17	13
Milk cows	32	105	51	32	23	17	11
Hogs and pigs	3	6	4	3	3	3	5
Chickens 4 months old and over	33	111	39	34	28	25	14
Sheep and lambs	2	45	2	(Z)	1	(Z)	2
Ewes 1 year old and over	1	30	1	(Z)	1	(Z)	1
Subregions 73 and 82							
Nnmber of farms	23,017	39	516	1,962	5,182	8,988	6,330
Average nnmber per farm:							
All cattle and calves	23	150	69	45	28	19	12
Cows and heifers	13	83	40	25	16	11	7
Milk cows	12	67	36	23	15	10	7
Hogs and pigs	4	33	10	7	5	3	2
Chickens 4 months old and over	53	101	93	75	64	50	38
Sheep and lambs	1	89	3	2	1	1	(Z)
Ewes 1 year old and over	1	6	2	1	1	1	(Z)
Subregion 112							
Number of farms	8,459	108	766	2,235	2,819	2,010	521
Average number per farm:							
All cattle and calves	32	107	72	41	27	18	12
Cows and heifers	16	57	33	20	13	8	6
Milk cows	15	57	31	18	12	8	5
Hogs and pigs	2	6	3	2	2	2	1
Chickens 4 months old and over	44	94	60	58	42	28	21
Sheep and lambs	3	6	4	3	3	2	1
Ewes 1 year old and over	2	5	2	3	1	1	1

Special dairy area and item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Subregion 115							
Nnmber of farms	1,101	974	54	43	20	10	------
Average number per farm:							
All cattle and calves	239	259	120	63	47	22	------
Cows and heifers	181	198	70	45	21	5	------
Milk cows	178	195	70	40	21	5	------
Hogs and pigs	1	1	3	------	1	3	------
Chickens 4 months old and over	24	24	35	10	29	25	------
Sheep and lambs	2	2	(Z)	------	(Z)	------	------
Ewes 1 year old and over	1	1	------	------	------	------	------
Subregion 116							
Number of farms	8,783	1,088	2,099	2,484	1,832	1,125	155
Average number per farm:							
All cattle and calves	72	231	87	47	31	20	12
Cows and heifers	42	133	51	28	18	11	8
Milk cows	41	130	51	28	18	11	8
Hogs and pigs	1	1	1	(Z)	1	(Z)	(Z)
Chickens 4 months old and over	30	71	34	18	25	22	6
Sheep and lambs	(Z)	1	1	(Z)	(Z)	(Z)	1
Ewes 1 year old and over	(Z)	1	(Z)	(Z)	(Z)	(Z)	(Z)
Subregions 118 and 119							
Number of farms	12,321	372	2,576	3,252	2,564	2,567	990
Average number per farm:							
All cattle and calves	36	132	62	37	25	16	9
Cows and heifers	22	84	38	23	15	9	5
Milk cows	21	81	38	23	14	8	5
Hogs and pigs	1	1	1	1	1	1	1
Chickens 4 months old and over	39	43	51	47	37	28	21
Sheep and lambs	2	6	3	2	2	1	(Z)
Ewes 1 year old and over	1	4	2	1	1	1	(Z)

Z Less than 0.5.